outdoor recreation action

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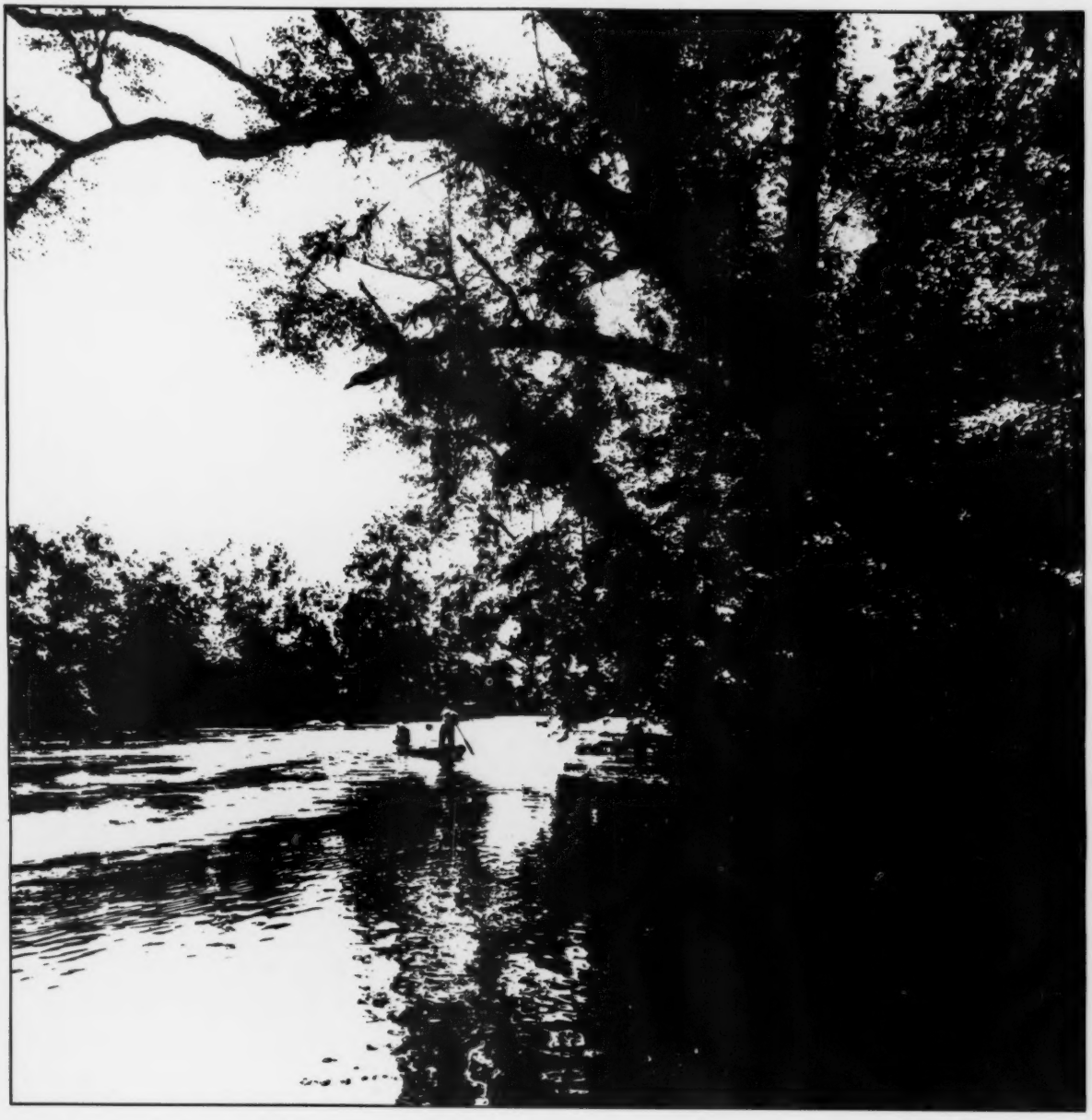

Wild and Scenic Rivers

outdoor recreation action

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America's Wild and Scenic Rivers

The diversity of the Nation's rivers is amazing. It is as though the Almighty set out to display His dexterity; as though He might have said:

America shall be laced by numerous rivers. The Suwannee shall rise in the swamps and marshes of Georgia and Florida; its amber waters flowing gently through cypress and southern pines draped with Spanish moss.

The mountains of North Carolina shall issue forth the Chattooga River, rushing recklessly and happily through boulders and rock ledges along the South Carolina-Georgia border.

The New River in North Carolina shall be the earth's second oldest, its waters for centuries wearing down the land so that the river flows through foothills as gently rounded as a maiden's breast.

From the dolomite rocks of Missouri's Ozarks, huge, sparkling springs shall well up and feed the lazy Eleven Point and Jacks Fork rivers in the Ozark National Riverways.

In the Siskiyou Mountains, the Rogue River shall spew forth as though an inexhaustible source of champagne flowed forever, steeply rushing to the sea.

In Idaho, the Salmon shall be so wild men will call it the "River of No Return."

Across America representatives of these types of rivers and all the gradations among them, are fortunately still there to be preserved.

Like the veins and arteries of a human hand, they carry the liquid sustaining life of a nation and a continent. At the same time, they carry society's unneeded by-products to the sea. In the period of his great naiveté and ignorance which still may not be ended, man has overloaded, depleted by water withdrawals, overheated, dammed, channeled, and littered some of America's most beautiful rivers and streams.

Bull Sluice on the Chattooga River.

Oregon's Rogue River offers superb white water.

At last, however, in 1968, the first steps were taken to preserve some of these magnificent waterways. Because of the unbelievable resiliency of nature, many of the wildest and most scenic rivers have survived so that Americans have another chance. This issue of "Outdoor Recreation Action" is all about efforts to protect and preserve some of these priceless gems and to encourage instream water conservation for recreation uses. Under the National Wild and Scenic Rivers Act of 1968, State rivers programs and instream flow programs, much is being done.

River Preservation and Recreation Programs:

A Status Report

(This article is adapted from a paper presented by Robert L. Eastman, Chief, Division of Resource Area Studies, Bureau of Outdoor Recreation, at a national symposium, "River Recreation Management and Research," January 24-27, 1977, at Minneapolis, Minn.)

Background

Of the more than three million miles of rivers and tributaries in the United States pouring their waters down to the sea, many have been harnessed for flood control, navigation, hydroelectric power, municipal and industrial water supply, and irrigation. Cities, factories and homes have been built on their flood plains. Their banks have been dumping grounds for waste materials and their waters the recipient of industrial and municipal wastes. In many ways, the beauty and purity of these streams have been mindlessly destroyed. An affluent society has become an effluent society. It has degraded drinking water and destroyed the values of fish, wildlife and scenic and recreation resources.

The need to preserve portions of a national heritage is not new. However, there is no need to recite history except as it relates directly to the efforts to establish a system to protect wild and scenic rivers. In 1961, the Senate Select Committee on National Water Resources recommended:

That certain streams be preserved in their free-flowing condition because their natural scenic, scientific, and esthetic and recreational values outweigh their value for water development and control purposes now and in the future.

This recommendation was reinforced by the Outdoor Recreation Resources Review Commission when it concluded in its final report in January 1962 that: "Certain rivers should be preserved in their free-flowing condition and natural setting." Because of the unique scenic and recreational values that certain rivers provide, the Commission endorsed efforts to preserve them in their natural condition. To accomplish this objective, it recommended that studies be made to identify rivers or river segments having these values.

In 1962, the Secretaries of the Interior and Agriculture directed a joint effort by the two departments to set up a national system of free-flowing rivers. A wild rivers study committee was selected to formulate a procedure for setting up the system. All of the States were contacted and with their assistance, some 650 rivers that seemed to be worthy of consideration were listed. Field study teams were organized with representatives of Federal agencies and the States. The teams culled the list down to 67 rivers. A reconnaissance was then made of these 67 to determine their suitability for possible Federal designation. On the basis of this reconnaissance, a more detailed study was conducted on 22 rivers which appeared to deserve some type of protection or preservation in a free-flowing condition. Legislation to accomplish this objective was drafted and submitted to the Congress.

Wild and Scenic Rivers Act

In October 1968, after some 6 years of discussion and debate, the Wild and Scenic Rivers Act, P.L. 90-542, became law. The act established the basic principle that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, are

White cliffs are typical landscape along the Upper Missouri River in Montana.

to be preserved in a free-flowing condition and protected for the benefit and enjoyment of present and future generations.

The clear intent of Congress in the act was to establish a system of areas distinct from the traditional concept of a National Park. Rather than acquiring a massive land area, the Federal agency managing a component of the National System is to acquire only a narrow strip of land sufficient to insure protection of the river environment. Fee acquisition of lands is limited to an average of no more than 100 acres per river mile, and the power of eminent domain is suspended when fee title to 50 percent of the authorized area is in public ownership. Additionally, scenic easements may be acquired in sufficient amount to make the total acquisition not more than an average of 320 acres per mile. (This is equivalent to a river corridor averaging one-half mile wide.) The effect is to permit continued agricultural and residential use near rivers in the system, but to preclude heavy development which would impair the character of the river involved.

The Wild and Scenic Rivers Act established the National Wild and Scenic Rivers System composed of eight initial rivers and identified 27 other rivers to be studied for possible inclusion in the National System.

The act further encourages the inclusion of State rivers in the system by providing that upon request of the Governor of a State, rivers which have been designated by the State legislature as wild, scenic, or recreational river areas and which meet the criteria set forth by the Congress and supplemental criteria developed by the Secretary of the Interior, may be protected as part of the National System. In addition, the act authorized the Secretary to provide technical assistance,

John boaters ease along Missouri's Eleven Point River.

advice, and encouragement to the States, political subdivisions, and private organizations in their efforts to establish State and local wild, scenic and recreational river areas.

River Studies and Reports

River studies are conducted by study teams under the leadership of the Department of the Interior or the Department of Agriculture with representatives of concerned States, their political subdivisions, and concerned Federal agencies. The studies form the basis of reports to the President and the Congress. Each study report contains information and makes recommendations about the river's eligibility for inclusion in the National System, and indicates how uses of the land and water would be enhanced, foreclosed, or curtailed if the river and its adjacent lands were added to the system.

Present System

Since October 1968, there have been six amendments to the Wild and Scenic Rivers Act which have resulted, among other things, in the addition of seven rivers to the National System under Federal administration and the designation of 31 additional rivers for study as potential components of the National System.

As of January 1977, there are 19 rivers or river segments, totaling some 1,655 miles, in the National Wild and Scenic Rivers System, 11 of which have been added since passage of the act. River mileages, by classification, are approximately: Wild—689; Scenic—463; and Recreational—503. Fifteen of the rivers in the National System are administered by Federal agencies, i.e., National Park Service, Forest Service, Bureau of Land Management, and the Fish and Wildlife Service. Four are wholly under the administration of States: Maine, Ohio (2), and North Carolina. Tennessee, Minnesota, and Wisconsin share administrative responsibilities with the National Park Service on portions of two other rivers.

Some details on the rivers currently in the National System and those under study may be found in Table 1—River Mileage Classifications for Components of the National Wild and Scenic Rivers System, dated January 1977, and Figure 1—National Wild and Scenic Rivers System, As Authorized by P.L. 90-542, As Amended, dated January 1977.

Based on available information, 24 States have some form of rivers preservation program, backed by specific legislation, to enhance the values of their free-flowing rivers. Two other States have administrative or executive authority to initiate scenic rivers programs or to study selected rivers for inclusion in a State system. This does not mean that all these States have strong and effective rivers preservation mechanisms in effect. The programs run the gamut from merely

an "intent" to initiate a program, to a few States with established scenic rivers systems and effective land use control measures in force.

Progress and Problems

On the surface, it appears that there has not been a great deal of progress in reaching the objectives set by Congress. However, the situation is not as bleak as it seems.

The studies of the wild and scenic rivers proposals have become considerably more complex as a result of the need to consider the requirements of the National Environmental Policy Act of 1969 (including the preparation of environmental impact statements), various State and Federal water quality acts, the Principles and Standards for Planning for Water and Related Land Resources developed by the Water Resources Council, the efforts to solicit public participation in the planning process, and other legislation. This, together with the efforts to solicit State participation in the acquisition, development, and administration of all or portions of the proposal, has slowed study progress.

Irrespective of these problems, nine of the river studies have been completed and submitted to the President and the Congress, while 12 additional study reports are under review by the Executive Office of the President. The 94th Congress enacted legislation on three of the river studies prior to clearance by the Executive Office and, hopefully, the remaining nine will be cleared for consideration early in the 1977 session of Congress.

In 1975 and again in 1976, Interior and Agriculture jointly prepared a list of some 20 additional rivers recommended for study as potential candidates for addition to the National System. Hopefully, the legislation will be cleared for consideration by the 95th Congress early in the 1st Session.

While the Wild and Scenic Rivers Act, P.L. 90-542, established a National Wild and Scenic Rivers System, it did not define the system or establish parameters. The system exists open-ended as to its intent, geographic distribution, and balance of types of rivers to be included. The Bureau has initiated an effort to define what should comprise the scope of a minimum system. The Bureau of Outdoor Recre-

Table 1: River Mileage Classifications for Components of the National Wild and Scenic Rivers System — **October 1976**

River Present Units in the National System	Administering Agency	Miles by Classification Wild	Scenic	Recreational	Total Miles
1. Middle Fork Clearwater, Idaho (P.L. 90-542—10/2/68)	USFS	54	—	131	185
2. Eleven Point, Missouri (P.L. 90-542—10/2/68)	USFS	—	44.4	—	44.4
3. Feather, California (P.L. 90-542—10/2/68)	USFS	32.9	9.7	65.4	108
4. Rio Grande, New Mexico (Rio Grande Mgt. by Agency) (P.L. 90-542—10/2/68)	BLM/USFS (BLM) (USFS)	51.75 (43.90) (7.85)	— — —	1 (0.25) (0.75)	52.75 (44.15) (8.60)
5. Rogue, Oregon (Rogue Mgt. by Agency) (P.L. 90-542—10/2/68)	BLM/USFS (BLM) (USFS)	33 (20) (13)	7.5 — (7.5)	44 (27) (17)	84.5 (47) (37.5)
6. St. Croix, Minnesota and Wis. (P.L. 90-542—10/2/68)	NPS	—	181	19	200
7. Middle Fork Salmon, Idaho (P.L. 90-542—10/2/68)	USFS	103	—	1	104
8. Wolf, Wisconsin (P.L. 90-542—10/2/68)	NPS	—	25	—	25
9. Allgash Wilderness Waterway, Me. (Secretarial designation—7/19/70)	State of Maine	95	—	—	95
10. Lower St. Croix, Minn. and Wis. (P.L. 92-560—10/25/72—27 mi.) (Secretarial designation—6/17/76 —25 mi.)	NPS States of Minn. and Wis.	— —	12 —	15 25	27 25
11. Chattooga, NC., S.C., and Ga. (P.L. 93-279—5/10/74)	USFS	39.8	2.5	14.6	56.9
12. Little Miami, Ohio (Secretarial designation—8/20/73)	State of Ohio	—	18	48	66
13. Little Beaver, Ohio (Secretarial designation—10/23/75)	State of Ohio	—	33	—	33
14. Snake, Idaho and Oregon (P.L. 94-199—12/31/75)	USFS	32.5	34.4	—	66.9
15. Rapid, Idaho (P.L. 94-199—12/31/75)	USFS	31	—	—	31
16. New, North Carolina (Secretarial designation—4/13/76)	State of North Carolina	—	26.5	—	26.5
17. Missouri, Montana (P.L. 94-486—10/12/76)	BLM/FWS	72	28	59	159
18. Flathead, Montana (P.L. 94-486—10/12/76)	FS/NPS	97.9	40.7	80.4	219
19. Obed, Tennessee (P.L. 94-486—10/12/76)	NPS/State of Tenn.	46.2	—	—	46.2
	Total	689.05	462.7	503.4	1,655.15

California's Feather River became an "instant" component of the National Wild and Scenic Rivers System.

ation's three eastern Regional Offices are identifying all rivers or river segments 25 miles or longer in their regions which appear to be relatively free from development, and have good water quality and sufficient streamflow to provide for a quality recreation experience. After review and consultation with representatives of Federal and State agencies, private organizations, and the public, the list of rivers will be reduced to those most likely to qualify as candidates for the National System.

A fairly detailed reconnaissance will be made of the rivers on this reduced list to identify their specific qualities and develop a priority ranking. Following approval by the Administration, the proposed minimum system would be transmitted to the Congress. Present plans call for completion of the definition of the system by the remaining Regional Offices in fiscal year 1978.

Although not covered under the Wild and Scenic Rivers Act, the Department has a very active rivers program in Alaska. In compliance with the Alaska Native Claims Settlement Act, P.L. 92-203, the Bureau of Outdoor Recreation completed detailed studies on 28 rivers in Alaska. As a result of these studies, the Secretary of the Interior has proposed adding 20 new units totaling 2,753 miles of river to the National Wild and Scenic Rivers System. While 16 of these rivers lie within the boundaries of other areas proposed for addition to the National Park, National Wildlife Refuge and National Forest Systems, four rivers with a total of 705 miles of river and 800,000 acres of adjacent lands would be established as separate units of the system.

In addition, under the provisions of the Naval Petroleum Reserves Production Act. P.L. 94-258, studies will be made of the rivers lying wholly or in part within Petroleum Reserve No. 4 in Alaska to determine whether they should be considered as potential candidates for the National System.

While there has been significant progress, it has not been without problems. The designation of long stretches of river as components of the National System could be prohibitively expensive if lands must be acquired in fee. Because of this, methods are continually being sought to provide the necessary land use control to protect the river environment without having to acquire full fee title to the lands. Thus, proposals to be transmitted to Congress shortly will include utilization of scenic easements, zoning, and other forms of land use control.

Control of use is one of the major management problems today; it is one which is going to become even more critical as the demand for river recreation experiences increases and the supply of available quality resources decreases. There must be methodology to permit determination of the carrying capacity of a stream consistent with the preservation of the resource as classified. Once established, the river management plan must control use at, or below, that capacity in order to assure preservation of the resource and a quality recreation experience for the user.

Lack of acceptance on the part of some segments of the public is another problem which must be resolved. Some of this is a matter of definition. The Wild and Scenic Rivers Act established three classes or rivers—wild, scenic, and recreational.

The differences among the various classifications are the degree to which there is evidence of man's presence in the river environment. Wild rivers essentially provide primitive experiences with little or no evidence of man's presence; they are generally inaccessible except by trail. Scenic rivers, while largely primitive and relatively undeveloped, are accessibe in some places by road. Recreational rivers are readily accessible by road or railroad and have some development along their shorelines. However, many people equate "wild river" with a whitewater experience and understand only with difficulty how their remote, slow-moving stream can be considered wild. Scenic designaton seems to be fairly understandable. However, recreational river classification frequently brings visions of massive recreation development. These and other misconceptions regarding the program must be corrected at every opportunity so as to obtain widespread public support and understanding.

A great deal of progress has been accomplished since October 1968; significant actions are being taken to maintain the momentum generated over the past 8 years. In the short term, the Bureau is hopeful that the Executive Office of the President will release the study reports completed by Interior and Agriculture, and the legislative proposal to designate 20 additional rivers for study. Further, the Congress is expected to begin considering the proposals submitted under the Alaska Native Claims Settlement Act, including the proposals to add 20 Alaskan rivers to the National System. BOR expects to complete analysis of the Nation's remaining free-flowing rivers east of the Mississippi River by early 1978 and the remainder of the country by the end of the year. Following that, a nationwide list of rivers will be developed for consideration by the Congress as potential candidates for study and possible additions to the National Wild and Scenic Rivers System.

Canoeists pause in a trip along Maine's Allagash River.

Some State Programs:

As tabulated in the chart below, most of the States have initiated or are considering stream protection programs. Some outstanding examples are found in California, Kentucky, Louisiana, Maine, Michigan, Minnesota, New York, Ohio, Oregon, Pennsylvania, Virginia, and Wisconsin. Some of these are summarized below. Contacts are provided elsewhere in "State Scenic Rivers Contacts."

Maine

The *Allagash River* in Maine has long been recognized as one of the outstanding wild and scenic rivers in the United States. A 1956 State Plan first mentioned it for possible acquisition. Interior Department studies proposed an Allagash National Recreation Area and a National Riverway in the early 1960's. In 1963, the State created an Allagash River Authority. An Allagash Advisory Committee, formed under the Authority, was authorized to formulate plans and proposals to preserve the Allagash. In 1966, these efforts resulted in State legislation creating the Allagash Wilderness Waterway and authorizing a $1.5 million bond issue to acquire the needed lands and waters. In 1970, the Allagash became the first State-administered component of the National Wild and Scenic Rivers System. By 1972, all land acquisition had been completed with one-half the required $3 million provided by the Land and Water Conservation Fund. In 1973, the State completed an Allagash Wilderness Waterway Concept Plan to guide management.

The Allagash Wilderness Waterway consists of a 92-mile corridor through the rivers, lakes, and forests of northern Maine.

The area includes an inner restricted zone where camps, timber cutting, and all construction are prohibited. This zone varies from 400 to 800 feet from the high water mark. An outer zone extends one mile from the high water mark, and though privately owned, is controlled by the State's policing powers. Timber harvest is allowed in the outer zone according to approved cutting plans.

These tools, for acquisition and police powers for timber cutting, have been used to protect the Allagash. Others, such as zoning and easements, have not been used.

Problems most frequently encountered in the area include access which is all privately owned, need for registration of users, dispersal of groups away from main routes of travel, need to restrict group sizes, total use limits, and disposal of litter.

Although Maine does not have an official State wild, scenic, or recreational river program, it has been successful with the Allagash. Also, two State laws provide potential protection of Maine's rivers: Land Use Regulation Commission statutes govern activities within 250 feet of all free flowing waters within the unorganized areas, while shoreline zoning statutes require all organized towns to zone all land within 250 feet of all bodies of water, including wetlands.

The Bureau of Outdoor Recreation in the Department of the Interior, is presently studying the East and West Branches of Maine's *Penobscot River* for possible wild and scenic river status in the National System.

Tennessee

The Tennessee Department of Conservation has sought to create a system of balanced outdoor recreation activities in a manner compatible with other important resource objectives. The Tennessee Outdoor Recreation Area System (TORAS), as administered by the Department, consolidates a variety of recreation programs in one unified and complementary scheme. The purpose of the TORAS is to integrate a range of recreational use and development philosophies through the establishment of specific programs and projects.

A major Natural Resource Area classification emphasizes concepts of preservation and limited levels of development. The State Scenic Rivers Program is an integral component of the Natural Resource Area classification, stressing protection of outstanding river resources in Tennessee. In 1968 the Tennessee General Assembly passed the State Scenic Rivers Act and authorized the Department of Conservation and the Game and Fish Commission (now Tennessee Wildlife Resources Agency) to implement the program. The act (Tennessee Code Annotated 11-1400) preceded other State and Federal legislation in programming a comprehensive system of scenic streams. The law recognized the need to moderate

Tennessee's Buffalo Scenic River. The State System also includes the Harpeth, Roaring, Blackburn Fork, Collins, Conasauga, Hiwassee, and French Broad Rivers and Spring and Jackahoe Creeks.

stream alteration such as impoundment, diversion, and channelization.

It was determined that there were intangible but significant benefits to be derived by deferring certain types of stream and riverbank development and emphasizing the preservation of natural, historical, and cultural attributes along those streams.

As passed in April 1968, the Tennessee Scenic Rivers Act designated ten streams in the system. In 1969 an amendment included the Hatchie River in West Tennessee, thus increasing the system to its present level of eleven designated rivers.

Depending upon a stream's classification and official boundaries, certain project activities may be authorized for implementation by the Department of Conservation and the Tennessee Wildlife Resources Agency (TWRA). Planning, development, and administration of a Scenic River project vary depending upon the natural characteristics of each stream; however, the goals and objectives of implementation remain the same—*preservation of a river in a manner that provides a gratifying and educational outdoor recreation experience and promotes the perpetuation of wise land and water use along that stream.*

Summary of State Wild and Scenic Rivers Programs — **January 1977**

State	System or Program	How Established (date) Legislative	Admin.	Number of Rivers
Alabama	System	—	1969	1
Alaska	None	—	—	—
Arizona	None	—	—	—
Arkansas	None	—	—	—
California	System	1972	—	9
Colorado	None	—	—	—
Connecticut	None	—	—	—
Delaware	None	—	—	—
District of Columbia	None	—	—	—
Florida	None	—	1972	0
Georgia	System	1969	—	0
Hawaii	None	—	—	—
Idaho	None	—	—	—
Illinois	None	—	—	—
Indiana	System	1973	—	2
Iowa	System	1970	—	1
Kansas	None	—	—	—
Kentucky	System	1972	—	8
Louisiana	System	1970	—	43
Maine[1]	System	1966	—	1
Maryland	System	1971	—	9
Massachusetts	Program	1971	—	0
Michigan	System	1970	—	6
Minnesota	System	1973	—	4
Mississippi	None	—	—	—
Missouri	None	—	—	—
Montana	None	—	—	—
Nebraska	None	—	—	—
Nevada	None	—	—	—
New Hampshire	None	—	—	—
New Jersey	None	—	—	—

Alabama

The State of Alabama has one Wild and Scenic River, Little River, designated in 1969. Also, efforts are underway by the State and the Alabama Rivers Conservation Council to secure passage of legislation based on the National Wild and Scenic Rivers Act and the Tennessee Scenic Rivers Act.

California

In 1972, Senate Bill 107 (Chapter 1259) established a California Wild and Scenic Rivers System. The act named 9 rivers and streams, including portions of the Klamath, Scott, Salmon, Trinity, New, Smith, Eel, Van Duzen, and American Rivers, and directed preparation of management plans. The State has begun preparation of plans for selected tributaries and mainstem reaches included within the system. Actual plans are being prepared through contracts with environmen-

State	System or Program	How Established (date) Legislative	Admin.	Number of Rivers
New Mexico	None	—	—	—
New York	System	1973	—	61
North Carolina[2]	System	1971	—	2
North Dakota	System	1975	—	1
Ohio[3]	System	1968	—	8
Oklahoma	System	1970	—	5
Oregon[4]	System	1971	—	8
Pennsylvania	Program	1972	—	0
Puerto Rico	None	—	—	—
Rhode Island	None	—	—	—
South Carolina	System	1974	—	0
South Dakota	Program	1972	—	0
Tennessee	System	1968	—	11
Texas	None	—	—	—
Utah	None	—	—	—
Vermont	None	—	—	—
Virginia	System	1970	—	2
Washington	None	—	—	—
West Virginia	System	1969	—	5
Wisconsin	System	1965	—	3
Wyoming	None	—	—	—
Total		24	2	190

Secretarial Designation of State Rivers to the National System:

[1] Maine — Allagash River designated July 1970.

[2] North Carolina — New River added to the National System by the Secretary of the Interior April 13, 1976. P.L. 94-407, September 11, 1976, gave the New River additional protection.

[3] Ohio — Little Miami River designated August 20, 1973. Little Beaver Creek designated October 23, 1975.

[4] Oregon — Application denied. Segments of 6 rivers requested to be added. Sec. 2(a) (ii) is not applicable to rivers where Federal lands are involved. Would require Act of Congress.

tal planning consultants to conserve time and control costs.

Objectives of the California program are to administer a system which protects the rivers included and to prepare waterway management plans in cooperation with local and other government and private agencies.

The program has four goals:

Increase awareness and participation so as to protect the designated rivers and their values.

Classify river segments according to existing access and watershed conditions.

Develop a planning process to include the cooperation of interested Federal, State, and local government agencies.

Develop a management plan providing recommendations for effective implementation by responsible agencies.

The California Act states: "It is the policy of the State of California that certain rivers which possess extraordinary scenic, recreational, fishery or wildlife values, shall be preserved in their free-flowing state, together with their immediate environments, for the benefit and enjoyment of the people of the State."

California's Klamath River.

District of Columbia

Forming a great Y-shaped expanse of water through the Nation's Capital, the Potomac and Anacostia Rivers are among Washington, D.C.'s greatest environmental resources. Despite premium value, neither the Federal Government, which owns much of the riverfronts, nor the D.C. Government has established clearly defined controls for development or preservation.

No current District legislation governs the waterways. Federally, all projects affecting water bodies in the District must be approved by the U.S. Army Corps of Engineers. Bills have been introduced in Congress to establish the Potomac National River and the Potomac Heritage Trail.

Both the District Department of Recreation and the National Capitol Planning Commission have made policy recommendations for the rivers and creeks. In general, objectives are to preserve historic character, maintain open shorelines, and make the streams more acces-

sible to the public. Efforts to protect and preserve should extend beyond the District to include the whole basin.

Florida

The Executive Board of the Florida Department of Natural Resources in 1972 authorized the concept of a State Scenic and Wild Rivers Program. Nine streams have been identified as candidates for the system. None has been included.

Georgia

Two potential rivers have been listed under the Georgia Scenic Rivers Act of 1969. These are the Chattooga and Jacks River.

Indiana

Indiana's Natural, Scenic, and Recreational Rivers Program was established in 1973 to preserve and protect those streams in Indiana possessing outstanding natural and scenic characteristics.

Inclusion in the State's Natural, Scenic, and Recreational Rivers System precludes public actions which would negatively affect natural stream environments. Future development and destructive timber cutting are prevented by the acquisition of conservation easements. The purchase of these easements does not alter the existing land use but prohibits future land uses or developments which potentially could destroy the natural integrity of the stream and its banks. The easement is permanently attached to the deed and the landowner receives a single payment for the purchase of the easement. The easement program offers the opportunity to accomplish the intent of the 1973 Act with minimum disturbance to the landowner and cost to the taxpayer.

Two streams in Indiana have been designated components of the Indiana Natural, Scenic, and Recreational Rivers System, administered by the Department of Natural Resources: The Blue River in southern Indiana and Cedar Creek in northeastern Indiana. Sugar Creek, in west-central Indiana, may be the next stream added to the system; it is the most heavily canoed stream in the State.

The Potomac River waterfront, Washington, D. C.

Kentucky

The Kentucky 1972 General Assembly passed the Wild Rivers Act. As amended in 1974, it designated eight streams to be preserved and managed for posterity. The law specified preservation of lands 2,500 feet each side of the centerline of the stream or to the visual horizon.

The 1976 General Assembly reduced the 2,500 feet to 2,000 feet. On August 18, 1976, due to the similarity of programs, Governor Carroll, by Executive Order 76-841 transferred the Wild Rivers Section to the Division of Water Resources.

Management plans are now being prepared for each of the streams identified and meetings are underway with National Park Service personnel to formulate memoranda of agreements.

Rivers in Kentucky's system include the Cumberland, Red, Rockcastle, Green, Rock Creek, and Big South Fork, Martins Fork, and Little South Fork of the Cumberland River.

Louisiana

Forty-three streams are included in the system established by Louisiana's Natural and Scenic River Act of 1970. The State Legislature encourages riparian owners to grant scenic easements and surface easements. No provision has been made for funding the system.

The Suwannee River in Georgia and Florida.

Maryland

The Maryland Scenic and Wild Rivers Act was first passed in 1968. Recent amendments have designated a total of nine rivers as initial components of the State Scenic and Wild Rivers System. With the exception of the Youghiogheny, these rivers are not classified as either wild or scenic, with this classification to be done by the Department of Natural Resources after study and planning.

The act sets forth two basic tasks to be carried out under the general scenic rivers program. First, the Department is to prepare a study and plan for the use and development of the water and related land

Indiana's Sugar Creek is under consideration for the State's Natural, Scenic, and Recreational Rivers System.

The Youghiogheny is one of nine streams in Maryland's State System.

resources of each designated river. The second task specified is to inventory and evaluate all other rivers in the State for possible inclusion in the scenic rivers system. The act also establishes a formal set of advisory boards for the program.

The Youghiogheny River, due to its unique character, is singled out by the act for direct regulation by the Department. These regulations are now in effect. Detailed studies have been conducted on two rivers with studies and planning now underway on an additional three rivers.

Massachusetts

A 1970 study of Massachusetts' potential scenic and recreational rivers culminated in the passage of the Massachusetts Scenic and Recreational Rivers Act in October 1971. A lack of personnel has been the primary factor delaying its implementation. Massachusetts worked on defining an implementation program in 1976 and is seeking to carry it out on representative rivers.

Michigan

Michigan's Natural Rivers Program was initiated in 1971 following passage of the Natural Rivers Act in December 1970. This program, along with Wilderness and Natural Areas, Farmland and Open Space Preservation, Great Lakes Shorelands, Soil Erosion and Sedimentation Control, and others, is an important component of Michigan's total land management program.

Following consultation of Michigan's Department of Natural Resources staff and field personnel, local groups, and private organizations, 30 rivers were initially selected by the Natural Resources Commission in 1971 for study and possible inclusion in the State system. Recognizing that a coordinated approach was needed to implement Michigan's Natural Rivers Program, the Natural Rivers Task Force was formed in 1971 to provide assistance, review, and coordination with the varying programs and disciplines in the DNR.

Presently, action to have a stream added to Michigan's system of Natural Rivers must be initiated locally, rather than by the State. Following nomination, a long-range management plan for the stream is developed jointly by the DNR, local governments, and local citizens. This "natural rivers plan" is then reviewed by the public through hearings and other meetings, and revised to reflect citizen concerns. If the plan is then accepted by the Natural Resources Commission, the river may be designated a natural river under one of the three categories: Wilderness, Wild-Scenic, or Country-Scenic. Appropriate zoning ordinances must be adopted by local authorities within one year or the State will use State Administrative Rules to zone the river.

In 1972, the Jordan River was designated Michigan's first "wild-scenic" river. The program gained momentum in 1973 with the designation of three natural rivers and initiation of the study of 13 others: The Natural Resources Commission designated the Rouge and Betsie Rivers as "country-scenic" and "wild-scenic" rivers respectively. In December 1973 the Two Hearted River was given "wilderness" river status. State Administrative Rules were developed to zone the Jordan River when it became clear that local government units along the stream had decided not to accept the responsibility for developing and administering the necessary local zoning ordinances.

With time and experience it became apparent that increased public involvement and participation in the planning process of Michigan's Natural Rivers Program would be essential to ensure a proper balance between protection of the resource, the rights of the public, and the rights of the private property owner. During 1974, the main thrust of the program was directed toward increasing such public participation and broadening public understanding of the program.

The White River was designated a "country-scenic" river in 1975 and the Boardman River was designated "wild-scenic" early in 1976, bringing to six the number of rivers in Michigan's system. A total of 251 miles of mainstream and 390 miles of tributaries presently are included in the State's Natural Rivers System. In addition to formal natural river designation, many streams in Michigan have been locally zoned as a direct result of the Michigan DNR's efforts.

Minnesota

Even in the face of intensive development over the past decade, there are still Minnesota rivers largely unaltered by man. From these rivers, one can see, hear, and experience the same things that the Indians and early settlers did.

The lower St. Croix River forms a portion of the Wisconsin-Minnesota boundary.

In order to preserve and protect these priceless natural resources, the Minnesota Wild and Scenic Rivers Act became law in 1973. It emphasizes rivers preservation in present condition, although some rehabilitation can be done where feasible. The Minnesota Wild and Scenic Rivers Act includes a tripartite classification system for rivers as "Wild," "Scenic,' or "Recreational." The Commissioner of the Department of Natural Resources is empowered to make wild and scenic river designations.

Before a river can be included in the system, statewide standards and criteria and a specific river management plan must be prepared by the department. Along designated rivers, the primary means for controlling land use is by local ordinances. Guidelines for the establishment of these ordinances are contained in the statewide standards and criteria. Acquisition of key parcels along the rivers is essential, but the application of land use controls provides a "blueprint" for the future use of wild, scenic, and recreational river corridors.

Thus far, Minnesota's Wild and Scenic River System includes four rivers: The Kettle, the Upper Mississippi (from St. Cloud to Anonka), the North Fork of the Crow, and the Lower St. Croix (a component of the National System). Several other rivers are currently under study for possible inclusion in the State system. At the time the Minnesota Wild and Scenic Rivers Act became law, approximately 2,000 miles of the State's network of streams were envisioned as ultimately forming the State system. Minnesota is well on its way toward realizing this ambitious goal.

New York

New York State's Wild, Scenic and Recreational Rivers System in 1972 designated sections of 15 rivers within the Adirondack Park totaling over 172 miles. The enabling legislation is Title 27, Article 15, New York State Environmental Conservation Law.

In 1973, a 5-mile section of the Connetquot River, within the Connecticut River State Park, in Suffolk County (Long Island) became a Recreational River with approval of the Legislature and Governor.

In 1974, approximately 9¼-miles of the Carmans River in Suffolk County entered the Rivers System; three sections totaling about 6¼-miles received Scenic River classification and two sections of about 3 miles a Recreational River classification.

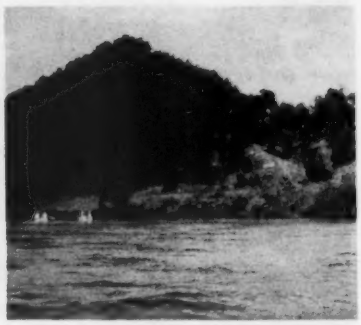
In 1975, an additional 1,027 miles on 55 rivers within the Adirondack Park became part of the Rivers System. Including the "instant river" designation in 1972, there are now 155.1 miles of Wild Rivers; 504.9 miles of Scenic Rivers; and 539.5 miles of Recreational Rivers within the Adirondack Park.

The legislation of 1975 also designated over 28 miles on sections of four rivers just outside the Adirondack Park.

In 1976, an additional 1-mile section of the Carmans River headwaters became Scenic River.

Thus, to date, over 1,214 miles on more than 70 rivers have been included in New York State's Wild, Scenic and Recreational Rivers System.

Studies in varying degrees of detail also have been done by the Department of Environmental Conservation or by citizen groups on 49 other rivers outside the Adirondack Park. Evaluations of these studies and/or follow-up studies are required.



America's oldest river, the New River in North Carolina.

Pilot management planning is underway in two of the study river areas—the Batten Kill and Beaver Kill—where local Citizen's Advisory Committees are working with the department to develop management plans before any proposals for designation go to the Legislature and the Governor.

North Carolina

North Carolina's Natural and Scenic Rivers Act of 1971 assures that some valuable river resources will be preserved in natural, scenic condition. The act, as amended, requires public hearings, feasibility studies, a report to the Governor, and notification of affected property owners before proposals may be submitted to the General Assembly.

The system now includes the Linville River and the Main Stem and South Fork of the New River. (See Bureau of Outdoor Region 5, Southeast.) Streams identified for potential inclusion are the Green River, Sarem Creek, and Bennets Creek. A 1975 survey to gain insights into citizens' preferences for rivers to be placed in the system drew recommendations of more than 100 river segments for study. These have been evaluated and a list developed to establish study priorities.

Little Missouri River meanders through North Dakota.

The banks of Ohio's Little Miami River are popular with bird watchers.

North Dakota

The development of a North Dakota Wild and Scenic Rivers Program began in 1971. That year the State Outdoor Recreation Agency submitted a bill to the North Dakota Legislature for a study of four potential rivers for inclusion in such a program. Strong objections to the eminent domain powers proposed for a river commission led to the measure's defeat.

In 1974, the need for Wild and Scenic Rivers legislation became apparent when several large industrial firms began expressing interest in potential damsites in western North Dakota, especially in the Little Missouri River valley. Increased interest in the development of coal gasification and electrical generation spurred the North Dakota Legislature into action. In March 1975, the Governor signed the Little Missouri State Scenic River Act, thereby creating North Dakota's first State Scenic River.

The law provides that the waters of the Little Missouri River and its tributaries will not be used for industrial purposes. It further states that the Little Missouri River shall exist in a "free flowing natural state," which means that impoundment, diversion, straightening, or other modifications will not be permitted. The construction of impoundments for recreational or agricultural purposes is permitted on Little Missouri tributaries. A provision in the act also allows for certain flood control measures.

The legislation established a 9-member Little Missouri River Commission which has advisory authority. It is expected to make decisions necessary to manage the river and to advise other units of government in implementing management decisions.

Ohio

Concern for saving the few quality streams in Ohio brought about the passage of Ohio's Scenic Rivers Act in 1968. Amended Senate Bill 108 was passed in 1972 to add the designations "Wild" and "Recreation" to the earlier Act. The Director of the Ohio Department of Natural Resources (DNR) has the responsibility for studying and designating stream systems in the State as wild, scenic, or recreation rivers.

The act requires that all State departments, agencies, and political subdivisions in Ohio which plan to build or enlarge any highway, road, or structure or to modify the channel of any watercourse within a wild, scenic, or recreation river area must obtain approval of the project from the director of the DNR. This provision assures that projects will not be constructed in a manner jeopardizing the scenic integrity of the designated river.

The Wild and Scenic Rivers Act of Ohio also stipulates that a 10-member citizens' advisory council be appointed by the director for each river designated under the act. Each council is composed of representatives of local government, landowners, local organizations, and other interests in the vicinity of the river.

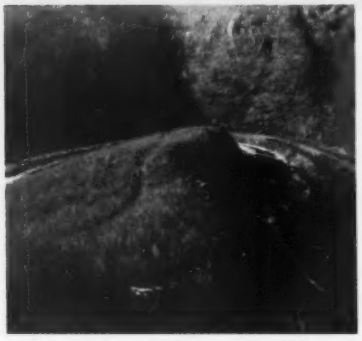
Formal recognition of wild, scenic, and recreation rivers in Ohio brings public appreciation and understanding of these streams' significant qualities which are worthy of preservation.

The Little Miami River became Ohio's first scenic river in 1969 followed by the Sandusky River, the Olentangy River, and the Cuyahoga River. A portion of the Little Miami became part of the National System in 1973. Designated as wild and scenic are Little Beaver Creek (added to the National System in 1975) and the Grand River; the Maumee has been designated as scenic and recreational; and a portion of the Stillwater River has been designated recreational.

Ohio's Scenic Rivers Act stipulates that streams included in the State system must be free-flowing. Greenville Creek and the portion of the Stillwater River designated as scenic include low head dams. Opponents of the inclusion of these waters in the State system, by court action, have succeeded in having them "undesignated." The act, however, is expected to be amended to allow streams having low head dams in the State system.

Oklahoma's Illinois River is one of five in the State Scenic Rivers System.

Oregon's Illinois River, included in the State Scenic Waterway System in 1970, is one of the original study rivers named in the National Wild and Scenic Rivers Act.



The Lehigh River is one of three being being studied in the Pennsylvania Rivers Inventory.

Oklahoma

The Scenic River Act of 1970 established Oklahoma's Scenic Rivers System. It now includes five stream segments: The Illinois River, Flint Creek, Lees Creek, Barren Fork Creek, and the Upper Mountain Fork River. No specific provision has been made for funding the system.

Oregon

The Oregon Scenic Waterways System is a program to preserve the natural values of selected free-flowing streams. Among state programs, Oregon's may be unique in its attempt to provide immediate, continuous regulation of private land use along the rivers. The others, by and large, are programs for study and recommendation to local planning bodies which may, or may not, lead to a degree of protection by zoning.

The State's 1970 Scenic Waterways Act named segments of the Owyhee, John Day, Deschutes, Rogue, and Illinois rivers and all of the Minam River, 496 miles of river in all, as "instant" scenic waters. The Clackamas and Sandy Rivers were subsequently added. For these and future additions it seeks to achieve the same basic goals as the National Wild and Scenic Rivers Act, Public Law 90-542. To complement the policy of permitting appropriate dams and impoundments, the policy of preserving the free-flowing character and natural setting of selected rivers is declared. Their administration is to protect and enhance esthetic, scenic, fish, wildlife, scientific, and recreation values, recognizing the individual character of each area.

Administration is assigned to the State Highway Commission. For the sponsors of the act this was a logical and expedient choice. The Highway Division already included the State Parks Branch; under the Oregon Constitution highway funds may be used for recreation and scenic preservation.

How the Act Works. The act is basically simple. A scenic waterway includes the river and related adjacent land within one-fourth mile of each bank. A landowner who wants to change the use of the land, make improvements on it, or engage in mining or tree cutting must first notify the State Highway Commission of his intent. The Commission then determines whether in its judgment the proposal would substantially impair the natural beauty of the scene. If it would not, the landowner may proceed immediately.

If the Commission determines that substantial impairment would result, the landowner may not proceed for one year unless agreement with the Commission is sooner reached. During that period the Commission is required to negotiate with the landowner in an effort to find a mutually acceptable modification of the offending proposal. These negotiations could lead to purchase or exchange of the property or the purchase of a scenic easement, if the owner agreed.

After one year the owner may proceed with his plans unless the Commission has acquired the property by condemnation if necessary.

The act provides no criminal penalties for violations, but the Commission is empowered to obtain injunctions for violations of the act or the Commission's rules. Continuing violation of an injunction could, of course, lead to penalties available to the court. The Commission may use condemnation for any violation of the act or its rules or at any time the land is used in a manner which substantially impairs natural beauty. In the case of condemnation, the Commission

must compensate the owner for the cost of any improvement made a year or more after a notification of intent.

The thrust of the act is to regulate by negotiation and compromise, without acquisition of land, when that is possible. In 3½ years of administration only one case has reached condemnation. A trailer park which would have packed 392 trailers and mobile homes into 60 acres on the bank of the John Day River was denied. Several other negotiated acquisitions have been made.

Administrative Rules and Regulations. The State Highway Commission's rules and regulations classify the rivers in six categories. Three, "Natural," "Scenic," and "Recreational," are drawn from the Federal Act. Three more, "Natural River View," "Accessible Natural River," and "Community," acknowledge existing reality on the land. The type and degree of restriction varies for each, preserving the status quo where that seems possible.

The act provides for additions to the system. The Commission must maintain a continuing study of deserving candidates. With concurrence of the State Water Resources Board, the Commission may recommend additions. Consistent with the Commission's recommendation, the Governor may designate additions. The next or current legislative assembly may initiate action to cancel the Governor's designation.

Oregon has purchased 488.18 acres in fee title, and scenic easements on 105.98 acres, for a total cost of $698,864. These acquisitions are along the Rogue, John Day, Sandy, and Illinois Rivers.

Pennsylvania

The Pennsylvania Scenic Rivers Act of 1972 authorized establishment of a Wild, Scenic and Recreational Rivers System to protect the natural, cultural, esthetic, and recreational values of designated waterways. Components of the rivers system are to be classified and managed as wild, scenic, recreational, or modified recreational rivers. Criteria have been established for eligibility, classification, and management of waterways. These criteria are described in a publication entitled "Pennsylvania Scenic Rivers System: Program Guidelines." Designation, or legal status, as a component of this system requires further State General Assembly action approved by the Governor. The Pennsylvania Department of Environmental Resources (DER) is required by the Scenic Rivers Act to conduct river studies and make periodic reports to the Governor related to river designation and management.

During the 1975 initial phase of this program, an inventory of Pennsylvania drainage basins identified potential components for the Rivers System and recommended priorities for river studies. The "Pennsylvania Scenic Rivers Inventory" provides detailed information relative to stream names, drainage basins, proposed segment limits and management classifications, approximate segment lengths, and water quality data. The inventory was cooperatively prepared by DER and a government-citizen task force with additional input from various local, county, and regional planning agencies, sportsmen's and environmental groups, and the general public.

Currently, prototype studies are being conducted on segments of Pine Creek, Lehigh River, and Schuykill River. The purpose of each study is twofold:
(1) to document the waterway's eligibility for inclusion in the Pennsylvania Scenic Rivers System, and (2) to develop a framework for administration, protection, and management of the waterway.

DER has devised a model process for conducting protoype scenic river studies. This experimental process is described in the "Pennsylvania Scenic Rivers System: River Study Guideline." The process is participatory and democratic and is adapted or tailored to fit the environmental, geographical, political, and social characteristics of each study area.

South Carolina

The South Carolina Scenic Rivers Act of 1974 established a State River System. To date, sections of two rivers have been selected as eligible for inclusion. These are:

Congaree River from Congaree Creek to the Route 601 Bridge

Ashley River from Bacon's Bridge to Bulls Creek

The System provides for Class I, Natural Rivers, Class II, Pastoral Rivers, and Class III, Partially Developed Rivers.

South Dakota

Athough South Dakota has had a State River System since 1972, there are no rivers currently included in that system. A nomination has been made to designate a 154-mile reach of the James River, to be administered by the State Department of Game, Fish, and Parks. The legislature will decide on designation of the river, probably in 1977.

Virginia

Establishment of a scenic rivers program in Virginia began in 1968 when the General Assembly directed the Commission of Outdoor Recreation to study the State's rivers with great natural and pastoral beauty and recommend ways of protecting and preserving these rivers by public and private efforts.

The Commission of Outdoor Recreation, through a contract with the University of Virginia, compiled a report which recommended some 29 rivers and candidates for a scenic rivers system and suggested legislation to establish such a system. The report, however, made no recommendations for inclusion of rivers in the system. It attempted first to establish the concept and procedure for selection.

This report and recommended legislation led to General Assembly

Wisconsin's Pike River is one of three streams designated Wild Rivers by the State Legislature.

passage of the Virginia Scenic River Act in April 1970. The act's purpose was to provide for the identification, preservation, and protection of certain rivers or sections of rivers which possess high quality natural beauty. The act is fairly unrestrictive legislation whose only prohibition is against dams or other impediments to the natural flow of rivers in the system; this is subject to review by the General Assembly. The act places no restrictions on land use or other uses of the water. In brief, the act does only the following:

(1) It requires all planning for use and development of water and land related resources to consider the effects of such projects on the stream's character; alternative plans are considered.

(2) Stipulates that an agency be appointed to administer the river and develop a management plan.

(3) Requires appointment of a local advisory committee to advise the Commission on river protection and management.

(4) Prohibits impoundments without the approval of the General Assembly.

Thus, the actual methods used to provide river protection are determined on a case-by-case basis as rivers are studied for inclusion in the System. The protection measures considered for a river include fee purchase of land, easements, and local zoning. To date, local zoning has been the preferred method of protection by the people in the localities affected by designation, particularly when public lands were not involved. In fact, the two rivers designated at this time rely on local zoning for river corridor protection. The other methods, however, may well play an important part in future scenic river designations.

Since 1970 the Commission of Outdoor Recreation has made seven scenic river studies. Of these, six were reported to the General Assembly with designation legislation introduced on three. Of those three, two were fully designated and one was deferred until the 1978 session to allow time for a hydroelectric power study.

Throughout these seven studies, one single factor has become most obvious; scenic river designation depends on the support of the locality. Without local support and particularly that of the riparian landowners, legislators are reluctant to make a designation.

Wisconsin

History of wild river preservation in Wisconsin goes back to 1905 when the State Legislature prohibited the building of dams on the Brule River and established the Brule River Forest to protect the river. Similar legislation in 1908 protected a portion of the Flambeau River. During years of water power growth and development, power companies sought to inundate several wild rivers in Wisconsin by damming to provide electric power. For the first time, in 1937 the utility regulating agency in the State refused to grant a dam permit on the basis of the dam's effects on scenery and sport fishing.

Formal legislation in 1965 named the Pine, Popple, and Pike Rivers as "wild rivers" and gave the Wisconsin Department of Natural Resources (DNR) the responsibility to implement the law through leadership and coordination. A Land and Water Conservation Fund matching grant of $750,000 is assisting the State in acquiring 7,000 acres of land along the three rivers in order to protect their scenic values.

Although the Wisconsin legislature has not designated additional wild rivers, the Board of the DNR has designated portions of the St. Croix, Wolf, Brule, and Flambeau Rivers as "wild rivers" in policy decisions and is taking steps to protect their scenic and recreational values.

In most of the county forests in Wisconsin, of which there are over 2.6 million acres, scenic zones have been established on the banks of rivers to limit timber cutting. Also the U.S. Forest Service's forest management plan for Nicolet National Forest, through which portions of the Pine and Popple Rivers flow, recognizes the stream banks as "water influence" zones, deserving special consideration because of their scenic values.

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Idaho's Clearwater River was one of the initial components of the National System.

Federal Wild and Scenic Rivers Efforts

The System Today

The National Wild and Scenic Rivers System includes 19 rivers and streams. These are 8 "instant" rivers named by the Wild and Scenic Rivers Act, Public Law 90-542, plus 7 added by later legislation, Public Law 92-560, Public Law 93-279, Public Law 94-199, and Public Law 94-486.

The eight initially included in the system are:

Middle Fork of the Clearwater in Idaho
Eleven Point in Missouri
Feather in California
Rio Grande in New Mexico
Rogue in Oregon
St. Croix in Minnesota and Wisconsin
Middle Fork of the Salmon in Idaho
Wolf in Wisconsin

The National System includes four State-administered rivers, the Allagash in Maine added by the Secretary of the Interior in 1970; the Little Miami in Ohio in 1973; the Little Beaver in Ohio in 1975; and the New in North Carolina in 1976. The Secretary also designated a 25-mile segment of the Lower St. Croix in 1976, extending that initial component.

Also, seven rivers added by Federal law include:

27 miles of the Lower St. Croix in Minnesota and Wisconsin, Public Law 92-560, 1972

Chattooga, North Carolina, South Carolina and Georgia, Public Law 93-279, 1974

Snake in Idaho and Oregon, Public Law 94-199, 1975

Rapid in Idaho, Public Law 94-199, 1975

Missouri in Montana, Public Law 94-486, 1976

Obed in Tennessee, Public Law 94-486, 1976

Flathead in Montana, Public Law 94-486, 1976

Study Rivers

Since the inception of the Wild and Scenic Rivers Program, 58 streams have been authorized by Congress for study as potential additions to the system.

By the end of 1976, nine studies had been completed and reported to the President and Congress. These include the Lower St. Croix, Chattooga, Suwannee, Upper Iowa, Little Beaver, Little Miami, Allegheny, Clarion, and Maumee.

Of the rivers studied to date, only three—the Allegheny and Clarion in Pennsylvania and the Maumee in Indiana and Ohio—have been found not qualified for inclusion in the system.

Twelve rivers whose studies are being reviewed by the Office of Management and Budget include:

Obed, Tenn., BOR
Delaware, N.Y. and Pa., BOR
Bruneau, Idaho, BOR
Missouri, Mont., BOR
Rio Grande, Tex., BOR
Penobscot, Maine, BOR
Gasconade, Mo., BOR
Pere Marquette, Mich., Forest Service
Flathead, Mont., Forest Service
Dolores, Colo., BOR-Forest Service
Salmon, Idaho, Forest Service
Skagit, Wash., Forest Service

The remaining 37 rivers on which studies have been authorized include:

Buffalo, Tenn.
Illinois, Oreg.
Moyie, Idaho
Pine Creek, Pa.
Priest, Idaho
St. Joe, Idaho
Youngiogheny, Md. and Pa.
American, Calif.
Au Sable, Mich.
Big Thompson, Colo.
Cache la Poudre, Colo.
Cahaba, Ala.
Clarks Fork, Wyo.
Colorado, Colo. and Utah
Conejos, Colo.
Elk, Colo.
Encampment, Colo.
Green, Colo. and Utah
Gunnison, Colo.
Illinois, Okla.
John Day, Oreg.
Kettle, Minn.
Los Pinos, Colo.
Manistee, Mich.
Nolichuckey, Tenn. and N.C.
Owyhee, South Fork, Oreg. and Idaho
Piedra, Colo.
Shepaug, Conn.
Sipsey, West Fork, Ala.
Snake, Wyo.
Sweetwater, Wyo.
Tuolumne, Calif.
Upper Mississippi, Minn.
Wisconsin, Wis.
Yampa, Colo.
Snake, Wash., Oreg., and Idaho
Housatonic, Conn.

Regional Study Efforts

Region 1, Northwest, Seattle, Wash. The Northwest Regional Office of the Bureau of Outdoor Recreation has responsibility for four river studies authorized by section 5(a) of the Wild and Scenic Rivers Act. These are the Bruneau River in Idaho, the Owyhee in Idaho and Oregon, the John Day in Oregon, and the portion of the Snake River from the Hells Canyon National Recreation Area downstream in Washington, Oregon, and Idaho to the town of Asotin. Also, the Regional Office has an active rivers program in Alaska.

Stately cliffs accentuate Idaho's Bruneau River.

The Allagash River in Maine was added to the National System by the Secretary of the Interior in 1970.

The Bruneau River study was initiated in 1973; the final report and final Environmental Impact Statement were completed in 1976. The report is undergoing review by the Office of Management and Budget.

Based on a joint Federal-State study of the river, 121 miles of the Brueau River and tributaries have been found to meet the criteria for inclusion in the National Wild and Scenic Rivers System. These river segments are:

Bruneau—downstream from Blackrock Crossing 71 miles to Hot Creek (immediately downstream from where the river emerges from the canyon).

Jarbidge—downstream from the junction of its East and West Fork tributaries 29 miles to its confluence with the Bruneau.

Sheep Creek—downstream from Mary's Creek 21 mlies to its confluence with the Bruneau.

A 192-mile segment of the *Owyhee* River from the Duck Valley Indian Reservation in Idaho downstream to the Owyhee Reservoir in Oregon has been the subject of a joint Federal/State study, begun in 1975. The field portions of the study have been completed and a draft report and draft Environmental Impact Statement has been submitted to Washington, D.C. Tentative findings are that 192 miles of the Owyhee River meet the criteria for inclusion in the National Wild and Scenic Rivers System. This includes the East Fork downstream from the western boundary of the Duck Valley Indian Reservation to the confluence with the South Fork, down the South Fork to the confluence with the main stem at Three Forks, and down the main stem to slack water of the Owyhee Reser-

voir. The 14 miles from China Gulch to Crooked Creek qualify as scenic; the remaining 178 miles qualify as wild.

The Regional Office is initiating studies in 1977 of a 146-mile segment of the *John Day River* in Oregon and a 35-mile segment of the *Snake River* in Washington, Oregon and Idaho. The field portions of these studies, draft reports, and Environmental Impact Statements will be prepared and submitted to the Congress and the Council on Environmental Quality, likely in 1979.

The Northwest Regional Office also has been involved in efforts to protect a 90-mile segment of the *Deschutes River* in Oregon extending from the Pelton Re-regulating Dam downstream to the mouth of the river. Three other entities also are involved in the effort to protect the Deschutes. These are the Warm Springs Indian Reservation which owns land along the upper portion of the river, the Bureau of Land Management which administers additional land along the river, and the State of Oregon which, by virtue of the river being in its scenic waterways system, has responsibility to protect those portions of the river which are bounded by privately-owned lands. For several years, the Warm Springs Indians, the State, the Bureau of Land Management, and the Bureau of Outdoor Recreation have cooperated in drafting legislation which would add the Deschutes to the National Wild and Scenic Rivers System and thereby achieve protection from Federal licensing or developments which are not accomplished by the river being in the Oregon Scenic Waterways System. It is anticipated that legislation will be introduced in the 95th Congress to add the river to the National System.

The *Main Salmon River* in Idaho was included as a "Study" river under the Wild and Scenic Rivers Act. The study has been completed by the *U. S. Forest Service* and submitted to the Office of Management and Budget for review.

Study of a segment of the Snake River began in 1977.

A portion of the *Snake River*—the Middle Snake in Idaho, Oregon, and Washington—received designation under the Wild and Scenic Rivers Act with signing by President Ford in December 1975 of the Hells Canyon National Recreation Area Act, P.L. 94-199. The segment of river from Hells Canyon Dam downstream to Pittsburg landing, a distance of approximately 32 miles, was designated a Wild River and the segment from Pittsburg landing downstream to approximate river mile 180.1, distance of approximately 35 miles, was designated a Scenic River. Public Law 94-199 also designated as a study river that portion of the Snake River from approximate river mile 180.1 to the town of Asotin, Wash., a distance of approximately 32 miles. Management of the designated Wild and Scenic River is vested with the Secretary of Agriculture. The Bureau of Outdoor Recreation is making the study of the "Study River" segment to determine whether or not it qualifies for designation and, if so, whether it should be classified as Wild, Scenic, or Recreational.

Public Law 94-199 creating the Hells Canyon National Recreation Area also established *Rapid River* in Idaho as a Wild River under the Wild and Scenic Rivers Act. Total length of Rapid River and its West Fork thus classified totals approximately 27 miles. Management is vested with the Secretary of Agriculture and is being accomplished by the U.S. Forest Service.

A detailed boundary description and management plan is being developed by the Forest Service for those segments of the Snake and Rapid Rivers classified as Wild or Scenic in the National Recreation Area Legislation.

The *Middle Fork of the Clearwater* Wild and Scenic River, an "instant" component in the system, includes the Selway River; the Clearwater, Nezperce, and Bitterroot National Forests share responsibility for its management.

The Clearwater and Lochsa segments flow along U.S. Highway 12 and are bordered by some rural development. The lower and upper sections of the Selway are also roaded. However, 50 miles of the river's mid-section passes through the Selway Bitterroot Wilderness.

The Wild Section of the Selway has become popular with whitewater boaters. To preserve its quality and pristine condition, boat launches have been limited to one party of 16 per day. Reservations are allocated by lottery with applications accepted annually during the period December 1-January 31. Wilderness is the most limiting classification affecting this section

The Flathead River in Montana is one of the most recent additions to the National System.

of river and dictates its management direction.

Along the Lochsa and Clearwater sections a number of activities are underway or being initiated. These include: development of a nature trail with a Wild and Scenic River theme, a historical ranger station-visitor center complex, water quality monitoring at key points, coordination with state highway and power company people to reduce adverse impacts of their activities, monitoring quality in tributary streams draining a proposed mining development, cooperation with State Fisheries people in anadromous fish programs.

The land and easement acquisition program is about 50 percent complete. Fifty conservation easements have been obtained covering 1,900 acres. Five parcels totaling 53 acres have been acquired in fee. Managers are currently working with landowners to develop administrative plans for the easements.

The Forest Service's Wild and Scenic Rivers Studies of the *Priest and Moyie Rivers* in Idaho are in the analysis stage in preparation of the Draft Environmental Impact Statements. The DEIS for the Moyie River is expected to be released in the early fall of 1977. The Priest River Study is approximately four months behind the Moyie River Study.

Public comment on both studies is complete and a summary of citizen participation for the Moyie River has been mailed to all interested agencies and individuals. A similar mailing for the Priest River is being prepared.

Alternatives being analyzed for the Moyie River include: No Change; County Zoning and Flood Plain Zoning; State of Idaho Management System; and inclusion in the Wild and Scenic River System under varying combinations of classifications for which the river qualifies.

Basic alternatives for the Priest River are similar except for the addition of a "Joint Management Agreement (between the Forest Service and State of Idaho) and Private Land Exchange," which is a noninclusion alternative.

The *U. S. Forest Service* study of the *St. Joe River* in Idaho is being prepared for transmittal to the Office of Management and Budget.

In 1968 Congress designated 84 miles of the *Rogue River* as "wild and scenic." Of this, 33 miles have been declared wild, 7½ miles scenic, and the remaining 43½ miles recreational. Responsibility for administering the Rogue is split between the Bureau of Land Management, Medford district, and the Forest Service, Siskiyou National Forest.

In 1970 the State of Oregon added its protection to the river under its Scenic Rivers Act. Under other State legislation the Oregon State Marine Board was also given responsibilities on the river. Since 1973 the two Federal and two State agencies have been involved in cooperative management of the Wild River visitor management program.

Over the years some limitation on use of the river has evolved, mostly applying to commercial outfitters. In 1973 a moratorium was placed on qualifiying additional outfitters to operate on the Rogue. Since 1974 limits have been placed on the number of trips and party size for the outfitters. These regulations, however, did not severely limit the outfitters. Most were unable to fill all their trips to capacity.

In June 1976 the managing agencies initiated a Rogue River Policy Review Group to review and to contribute to the formation of management policies to regulate recreational use on the wild section of the river. That group represents a broad cross section of river users and conservationists.

After four months of meetings the group was able to develop a proposal which was acceptable to a majority of the group. The proposal called for increasing the number of commercial starts from four per day to five during the week and to remain at four on weekends. For the first time, limits were proposed for private boaters who would be limited to six per day during the week and nine starts per day on weekends. This proposal would allow more than 20,000 people to run the river in 1977.

This proposal was presented to the public during the week of November 15. The overall reaction was negative. In meetings at Oakland, Calif., and Portland, Oreg., people opposed the proposal because it would allow too many to use the river. In the Grants Pass and Gold Beach, Oreg., meetings, those

The Rogue River in Oregon offers spectacular white-water boating.

in attendance were almost unanimously against any regulation that would affect private boaters. As a result of these meetings the managing agencies will have to reevaluate the review group's proposal. Rulemaking by the Marine Board was scheduled for January 1977.

Within the boundaries of the Wild, Scenic and Recreational Areas of the river there is land that remains in private ownership. In compliance with the Wild and Scenic Rivers Act, the Bureau of Land Management and Forest Service are acquiring control of the land within the boundaries of the area through scenic easements or acquisitions of fee title.

Initially some 5,100 acres of land were identified for scenic easements or fee title purchase. All of the acquisitions and easements within the Bureau's portion of the wild area have been made. However, within the Bureau's recreational segment only 1,914 acres have been purchased or protected with an easement. This leaves approximately 1,957 acres to purchase, obtain a scenic easement, or rely on restrictive county zoning ordinances. Primary emphasis on this land will be in acquiring scenic easements in order to protect and control the existing vegetative screening along the river's bank. To the extent feasible in areas not visible from the river, the Bureau will rely upon a Josephine County special zoning ordinance which prohibits industrial or commercial use and restricts housing density.

A study of the *Skagit, Cascade, Sauk,* and *Suiattle Rivers* in northwest Washington State was authorized in the original legislation (P.L. 90-542). The U.S. Forest Service is lead agency for the study. The State of Washington is a study participant.

A draft environmental statement and study report were issued on June 15, 1975. These documents proposed that the Cascade, Sauk (including the North Fork) and Suiattle Rivers be classified as Scenic Rivers for their entire study area length, and that the Skagit be classified as a Recreational River from the upstream side of the pipeline-utility corridor crossing near Sedro Woolley upstream to Bacon Creek. Public hearings were held on the study proposal in August 1975. A total of 227 responses to the proposal were received; 74 were oral responses submitted at the hearings; the balance were submitted in writing.

Completion of the final environmental statement and study report was delayed for approximately 8 months, beginning in late 1975, while the Forest Service completed an environmental analysis of the potential impacts of a proposed nuclear generating plant upon the Skagit River near Sedro Wooley. This analysis has been completed, and work has been resumed on the river study.

At present, the Forest Service has completed a preliminary final environmental statement and study report. These documents have been reviewed by the Chief of the Forest Service, and by other agencies within the Department of Agriculture. They have been transmitted by the Secretary of Agriculture to the Office of Management and Budget for final review.

The *Illinois River* in Oregon was one of the original study rivers named in the Wild and Scenic Rivers Act. The study was initiated in August 1971. The study report has been reviewed by the Department of Agriculture and Department of the Interior and other concerned Federal agencies. The Draft Environmental Statement and report should be available for public review during the spring of 1977.

The Illinois River, from Deer Creek to its mouth, was included in the Oregon Scenic Waterway System in 1970. The State has been cooperating in the Federal study effort.

On the segment of river between Briggs Creek and Nancy Creek, commercial outfitters have been limited to three trips per week. Future overall use levels are being considered in addition at a level of three trips per day. There are no non-commercial limitations at this time.

The *Middle Fork of the Salmon* River in Idaho is one of the original Wild and Scenic Rivers established by P.L. 90-542, on October 2, 1968. The entire length, 104 miles, and adjacent lands are classified as Wild River Area, except for the one mile

A raft with spray skirt negotiates rapids in the Middle Fork of the Salmon River.

Boat-campers along the Unalakleet River in Alaska.

of Scenic River classification in the vicinity of Dagger Falls. The lower 80 miles of the river is within the Idaho Primitive Area. There are approximately 32,000 acres within the Wild and Scenic River Area boundary.

The Recreation Management Plan for the Middle Fork of the Salmon River was approved in 1973. This is one of the most popular whitewater floating rivers in the United States. A permit and advance reservation are required for any float trip, either commercial or non-commercial. There are occasional parcels of private land within the Wild and Scenic River Area. Most of these are old homesteads. The Forest Service is currently in the process of obtaining scenic easements on these parcels of private land so that their use will be compatible with Wild River values.

Twenty *Alaskan rivers* totaling over 2,500 miles have been recommended for designation in the National Wild and Scenic Rivers System by the Secretary of the Interior.

The Alaska Native Claims Settlement Act (ANCSA) directed the Secretary of the Interior to withdraw from all forms of appropriations under the public land laws up to 80 million acres of unreserved public lands in Alaska, to determine which of these lands are suitable for addition to or creation as units of the National Park, National Forest, Wildlife Refuge, and Wild and Scenic River Systems, and to report his recommendations to the Congress.

The Wild and Scenic Rivers Act had not identified any rivers in Alaska for either the initial system or for study. Alaska, however, contains more than 365,000 miles of river, virtually all of which meet the basic criteria for inclusion in the system.

The Bureau of Outdoor Recreation solicited recommendations from Federal and State agencies, conservation groups, and others knowledgeable about Alaska and came up with 166 rivers. Refined criteria reduced the number to 69 rivers. During the early summer of 1972 an aerial reconnaissance further reduced the number to 40 rivers which BOR recommended for detailed consideration as potential units of the National Wild and Scenic Rivers System.

The 40 rivers were selected on their merits without regard to land ownership. To bring recommendations within the scope of the Alaska Native Claims Settlement Act no studies were made for rivers not primarily on Federal land.

Detailed ground studies were made on 29 rivers and 20 were recommended for inclusion in the National Wild and Scenic Rivers System. Sixteen of the 20 are within the boundaries of proposed parks, refuges or forests. Four lie outside any such proposal areas: Fortymile, Beaver, Birch, and Unalakleet.

Region 2, Pacific Southwest, San Francisco, Calif. Only three rivers in the Pacific Southwest Region have been designated or selected for study. These are the Middle Fork of the Feather River, North Fork of the American River, and the Tuolumne River. All are in California.

The *Middle Fork of the Feather River*—one of the eight "instant" rivers in the National System—is situated on the western slopes of the Sierra Nevada in east central California. Wholly within Butte and Plumas Counties, the designated river segment is approximately 80 miles long. It traverses Plumas National Forest for about 90 percent of this distance. The entire Middle Fork was an initial component of the National Wild and Scenic Rivers System. On October 12, 1976, the Congress amended the Wild and Scenic Rivers Act, deleting the upper portion, above Beckwourth.

The Green River below Flaming Gorge Dam in Utah.

The river has been classified into five zones—two wild, two scenic, and one recreational—based upon existing development and resource values. U.S. Forest Service management objectives for each zone are consistent with the values under which they were classified, with some areas to be retained in near-wilderness condition while others will be developed for more intensive use.

The river offers some outstanding fishing for brown and rainbow trout and is considered by the State as a Class I-Premium Trout Waterway. Most portions of the river are considered unsafe for boating.

The *North Fork of the American River* in Placer County, Calif., is being studied by the U.S. Forest Service for possible inclusion in the National Wild and Scenic Rivers System. The portion under study is 45 miles long. It passes through very rugged, scenic, and sometimes inaccessible portions of the Sierra Nevada west of Lake Tahoe.

Because of the terrain, access to the river is quite limited, and as a result no commercial rafting currently takes place. Private recreation use is quite limited but some potential exists for increased whitewater use. The study area includes much privately-owned land interspersed with Tahoe National Forest. The upper study limit is a community known as The Cedars; the lower terminus is the federally authorized Auburn Reservoir, a multipurpose Bureau of Reclamation project scheduled for completion in about 5-6 years.

The Forest Service is currently preparing an information brochure on Management Alternatives. This is expected to be available for public distribution early in 1977. Public meetings will be held at Sacramento and Auburn on the alternatives, beginning in February.

The North Fork of the American is an existing component of the California State Wild and Scenic Rivers System, but the State's designation extends 11 miles further upstream, to Mt. Meadow Lake. The State initiated and funded a waterway management plan in 1976. Through a Memorandum of Agreement, the Forest Service will keep the State informed of all Forest Service study findings, recommendations, and proposed actions prior to public release of such publications.

The North Fork of the American River in California is now under study for possible addition to the National System.

The *Tuolumne River* on the west slope of the Sierra Nevada in California is currently under joint study by the U.S. Forest Service of the Department of Agriculture, and Bureau of Outdoor Recreation, Department of the Interior. Located within Tuolumne County, the entire 92-mile study area is within Federal ownership, from the headwaters above Tuolumne Meadows in Yosemite National Park, through Stanislaus National Forest, and ultimately through a short Bureau of Land Management stretch to the study terminus at New Don Pedro Reservoir.

River access is generally very limited, due to the extremely rugged topography of the area. Much of the study area within Yosemite National Park has been proposed by the National Park Service for Wilderness designation. The Tuolumne has been termed the finest whitewater rafting stream in California, because of the quality of the uninterrupted 18-mile run it offers. In addition, the State has rated the trout fishery an "Extraordinary Fishery Waterway," its highest rating. Outstanding geologic and scenic features including examples of the effects of glaciation are also present in the Yosemite portion. Primitive California Indian values are also widespread, particularly in the lower study area.

A development proposal has been introduced for the Tuolumne, with the primary purpose of producing hydroelectric power for sale. By law, no action can be taken on this proposal pending completion of the study. A draft report and Environ-

mental Impact Statement are scheduled for spring release.

Region 3, Mid-Continent, Denver, Colo. A wide variety of river types are located in the Mid-Continent Region. The Great Plains are characterized by wide, meandering rivers bordered by cottonwood groves and agricultural land. Colorado, Wyoming, and Montana have sometimes large, sometimes small, rapidly descending rivers which originate in the snowfields of the Rocky Mountains. The rivers of Utah and western Colorado cut through deeply incised canyons of the high desert, providing some of the best whitewater boating opportunities in the area. Representatives of most of these river types are covered by the National Wild and Scenic Rivers System, either as components of the system or as rivers being studied for potential inclusion.

Portions of four rivers representative of the high desert region of Utah and western Colorado are being studied for potential inclusion in the National System: the *Yampa River* in Dinosaur National Monument, the *Green River* from below Flaming Gorge Reservoir to the southern boundary of Dinosaur National Monument, the *Colorado River* from a point about 20 miles inside Colorado downstream to its confluence with the Dolores River in Utah, and including the Utah segment of the Dolores and the *Gunnison River* from the upstream boundary of the Black Canyon of the Gunnison National Monument downstream to its confluence with the North Fork. Bureau of Outdoor Recreation studies of these four rivers were begun in early 1976 and will be completed in 1979.

Although the environments surrounding these rivers are somewhat similar, each river is distinctly different. The *Colorado River* for the first 25 miles meanders through red sandstone canyons that occasionally open into rolling hills. Waterfowl and other wildlife are abundant. Folds and faults are easily seen in the sandstone cliffs. The wide, slow, meandering character of the first 25 miles changes to a rapid narrow funnel of water for the next 15 miles as the river passes through Westwater Canyon. Here the river has cut its way through the overlying sandstone and deep into Precambrian gneiss and schist more than 1.7 billion years old. These black rocks provide a sharp contrast to the red sandstone which lies above. The scenery and exciting rapids have made this canyon a popular whitewater rafting river. After leaving Westwater Canyon, the river enters a wide, open rolling-hills-type terrain for the remaining 15 miles of study area.

The *Gunnison River* is similar to the Colorado in that it also cuts through dark Precambrian rock. Here, however, the overlying red sandstone is missing. In the Black Canyon of the Gunnison the sometimes sheer walls rise over 1,700 feet from the river to the canyon rim. In places the dark gneiss has been intruded by lighter-colored pegmatite dikes and sills creating a striking network of erratic orange patterns on the walls. The canyon bottom in this area is choked with rocks and boulders which the river flows over and occasionally under. The ruggedness of the area makes boating unsafe. Below the Monument the river continues to wind through canyons 400-800 feet deep. An outer canyon about 2 miles wide extends upward to 2,000 feet. Although this lower river area provides a good boating opportunity, access is limited to trails, and equipment must be carried in.

The proximity and interrelationship of the *Green* and *Yampa* Rivers made it possible to combine the studies of the two rivers. The *Green River* study begins in Red Canyon, immediately below Flaming Gorge Dam. For about 15 miles, this river flows through scenic red rock canyons known for their excellent fishing and whitewater boating opportunities. The river then enters a wide valley known as Browns Park, a famous historic outlaw hangout and ranching area. Passing through the Gates of Lodore, the river enters Dinosaur National Monument for the remaining 44 miles of the study segment. In the Monument, the river passes through the Canyon of Lodore, Echo Park, Whirlpool Canyon, Island Park, Rainbow Park, and Split Mountain Canyon. This river stretch is one of the best known whitewater rafting areas in the region.

The *Yampa River* also passes through the canyon country of Dinosaur National Monument. In the spring and early summer when runoff is high, this is also a popular whitewater rafting river. The Yampa River contains outstanding geologic, scenic, and fish values.

The *Dolores River*, studied jointly by BOR and the U.S. Forest Service in 1975, provides a transition between the high desert-type river and high mountain streams. The study area extended from the river's headwaters in the San Juan Mountains downstream through the mountains and foothills to the high desert canyon country of the Colorado Plateau. The report on the Dolores River notes that the 105-mile section of river between the McPhee Dam site and Bedrock, Colo., qualifies for inclusion in the National Wild and Scenic Rivers System. This segment begins in the low foothills of the San Juan Mountains and ends on the high desert of the Colorado Plateau. The natural flow of the river is characterized by relatively high flows during the snow-melt and low flows during the remainder of the year.

The most spectacular attraction on the Dolores River is Slick Rock Canyon, a massive, narrow, twisting, red sandstone gorge considered the most scenic portion of the river. Some feel it is one of the outstanding portions of desert river left in the southwest—reminiscent of the now-flooded Glen Canyon on the Colorado River. At the request of Utah's Governor, the segment of the Dolores in Utah is being combined with the Colorado River study.

Nine rivers are under study in the Mid-Continent Region which fit into a high mountain river category: *Piedra, Conejos, Los Pinos, Cache la Poudre, Elk, Encampment,* and *Big Thompson Rivers* in Colorado and the *Snake* and *Clarks Fork Rivers* in Wyoming. The U.S. Forest Service is responsible for all these studies except for the Big Thompson River which is being studied by the Bureau of Outdoor Recreation. Most of these, which originate in the snowfields above timberline, could be more suitably described as small streams for much of their length.

The *Big Thompson River* study includes the 14-mile portion of river within Rocky Mountain National Park. The upper 11 miles are in a remote area of the park with no developed access. The forested canyon through which the river flows is bordered on both sides by rocky ridges reaching to 13,000 feet. The river drops from over 11,000 feet at its source to near 7,000 feet when it leaves the park. The lower 4 miles are in Moraine Park. The lateral moraine bordering this park is said to be the most perfectly formed in the world.

The *Elk River* is in north-central Colorado between the town of Steamboat Springs and the Colorado-Wyoming State line. The main river above Clark and three tributaries designated for the study total over 35 miles in length. Study of this river by the Forest Service should be completed by the summer of 1979. The upper reaches of the river are in the Mt. Zirkel Wilderness Area. It flows through spruce, fir, and pine-covered mountainous country interspersed with large parks which are grazed by livestock and wildlife. Elk, mule deer, and black bear inhabit the river area. Major activities associated with the river include fishing, hiking, and camping, with the surrounding drainage being used for hunting, grazing, timber harvest, and general recreation.

The portion of the *Encampment River* is also in north-central Colorado near the Colorado-Wyoming State line. The two forks and the main stem to be studied total over 20 miles. The Forest Service expects to complete the study by late 1977. This river also begins in the Mt. Zirkel Wilderness Area. Fishing, hiking, and camping are the major activities; lands in the drainage are suitable for hunting, timber harvest, and general recreation. Nearby lands are covered with spruce, fir, and pine. Elk, mule deer, black bear, and numerous small animal species live near the river.

The *Conejos River* is in south-central Colorado in the mountains west of the San Luis Valley. The 36 miles of river designated for study are both above and below the Platoro Reservoir which was excluded from the study. The river provides opportunities for trout fishing on all parts of the river and hiking and camping on the part of the river above Platoro Reservoir. Below the reservoir, a road parallels the river and sightseeing use is significant. The study, now being conducted by the Forest Service, should be completed by late 1979.

Over 48 miles of the *Piedra River* and its tributaries in southwestern Colorado are being studied by the Forest Service. The study will be completed after March 1, 1978. Major recreation activities include hiking, trout fishing, camping, and possibly kayaking. The nearby lands, covered with spruce, fir, and lodgepole pine, offer opportunities for recreation, timber harvest, and cattle grazing. Wildlife near the river includes elk, mule deer, and black bear.

The *Los Pinos River* in southwestern Colorado is located one drainage west of the Piedra River. Over 80 miles of the river and its tributaries above Vallacito Reservoir will be studied by the Forest Service beginning in early 1978. Most of the river is in the Weminuche Wilderness. Major activities include hiking, camping, and trout fishing. Nearby lands are covered with spruce, fir, and lodgepole pine. Wildlife near the river include elk, mule deer, black bear, and numerous small species.

The Cache La Poudre River lies partially within Roosevelt National Forest, Colo.

The *Cache la Poudre River* flows through the mountains and foothills of northern Colorado just west of Fort Collins. Over 64 miles of the river inside the Roosevelt National Forest and over 13 miles of the river inside Rocky Mountain National Park are designated for study. The Forest Service will begin the study in 1977. Recreational use includes fishing, hiking, camping, and kayaking. This river probably gets more kayak use than any other river in Colorado. The highway which parallels the Cache la Poudre for about 50 miles is heavily used by sightseers in the summer and fall. Vegetative cover in the drainage varies from open, grass-covered slopes to dense coniferous forests. The lands are suitable for hunting, grazing, timber harvest, and general recreation.

The *Clarks Fork River* is in northwestern Wyoming. Over 22 miles of the river in its main canyon will be studied by the Forest Service this year. Major activities include camping, trout fishing, and possibly kayaking, although some stretches may be too rough to kayak. The river is in a canyon with walls rising as high as 1,000 feet.

Approximately 50 miles of the *Snake River* between the Grand Teton National Park boundary and Palisades Reservoir in western Wyoming are being studied by the Forest Service. This river, which flows through one of the most picturesque mountainous areas in the world, and the adjacent National Parks and Forests offer vacationers a broad spectrum of outdoor recreation opportunities. In the area is the renowned Jackson Hole Valley, surrounded by highlands with the Teton Range on the west, Mount Leidy, Gros Ventre, and other mountains on the east and south, and the Yellowstone Plateau bor-

dering the valley on the north. The valley lies a few miles to the west of the Continental Divide and occupies the middle portion of the headwaters area of the Snake River.

A 159-mile section of the *Missouri River* in Montana from Fort Benton downstream to Robinson Bridge has recently been added to the National Wild and Scenic Rivers System. This last remaining major free-flowing portion of the Missouri is unlike any other river in the region. It passes through the Missouri Breaks, a highly-eroded "badland" type topography. Unusual eroded sandstone formations resembling castles, parapets, and other ancient structures border the river, which is generally wide and slow-moving. Outcroppings of dark intrusive rock thrust upward through this white sandstone, forming what appears to be huge manmade walls of rectangular blocks.

Important historic evidence of early trappers, settlers, and explorers, including Lewis and Clark, is found near the river. Occasionally there are sightings of rare species, such as the black-footed ferret and the bald and golden eagles, in the abundant wildlife. The opportunity to view the wildlife and unique geologic features combines with the slow wanderings of the river to provide a unique boating experience.

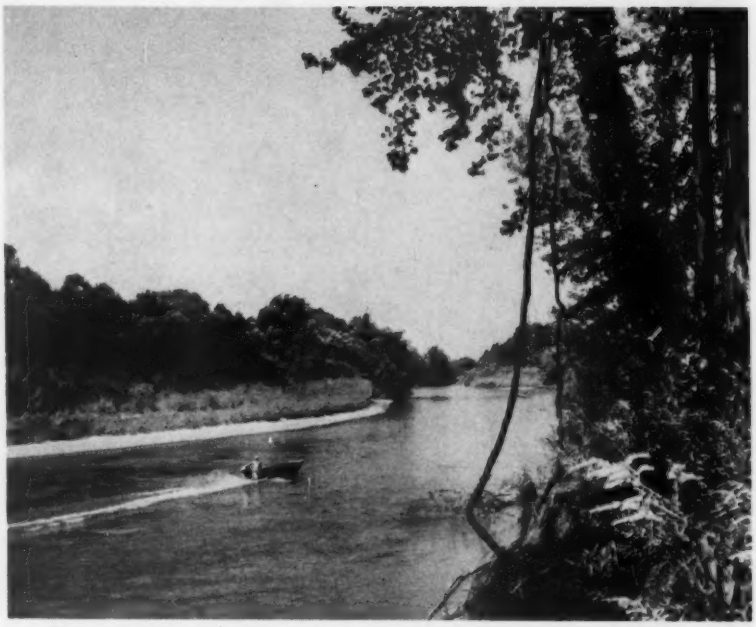
The study of the *Upper Iowa River,* in the Northeast corner of Iowa, was completed in May 1972. The report recommended State administration of the river corridor.

The *Gasconade River* in Missouri is one of the eight "instant" rivers added to the National System in October 1968. The U.S. Forest Service has management responsibility for the area.

A small segment of the *Sweetwater River* in central Wyoming is being studied. Completion date is scheduled for June 1979.

Sheer sandstone cliffs line the Upper Missouri River.

Legislation enacted at the end of 1976 added the Missouri Breaks segment of the Missouri River in Montana to the National System. It assigns administration to the Bureau of Land Management and requires BLM to develop a management plan within 1 year. The final management plan will be the product of working sessions with the public and special interest groups. BLM will strive for multiple use of the river and its shorelines. From a statement prepared by Barry Wirth, Public Information Specialist, BLM's Montana State Office.



The Current River is part of the Ozark National Scenic Riverways in Missouri.

The *Missouri River* from Gavins Point Dam near Yankton, S. Dak., downstream to Ponca State Park, Neb., is one of the few free-flowing stretches that still resembles the river that Lewis and Clark viewed on their historic journey of 1804 through 1806.

Following the Lewis and Clark expedition, many paddle-wheel boats plied the river adding to the historical and cultural significance of the area. This reach of the Missouri is becoming increasingly popular for canoeing and other forms of recreation; it abounds in resident wildlife, supports an excellent fishery, and is a major resting area for waterfowl during spring and fall migrations.

Through the efforts of the U.S. Army Corps of Engineers, this 58-mile segment of river is under study for possible inclusion in the National Wild and Scenic Rivers System. New methods are being tested to control erosion and also preserve the environmental values that make this portion of the Missouri so unique and valuable to the Nation.

In the spring of 1976, the Corps of Engineers, Missouri River Division, requested the Bureau of Outdoor Recreation to assist in evaluating the recreation resources and in preparing a report identifying the wild, scenic, and recreation potential of this segment of the Missouri River. During the past summer and fall, a study team of officials from the States of Nebraska and South Dakota, various Federal and local agencies, and private entities conducted field studies, analyzed pertinent data, and determined that the river segment meets the basic criteria for inclusion in the National System under the "recreation river" category.

Pending a determination as to the effectiveness and environmental acceptability of the experimental erosion control devices now being tested, the Corps report could recommend designation as a component of the National System.

This plan would constitute the Environmental Quality alternative for this reach of the river. Other alternatives, such as a navigation channel or constricted floodway are also under study. The Corps of Engineers' Missouri River Umbrella Study report is scheduled for completion in 1977.

The *North, South, and Middle Forks of the Flathead River* were added to the National Wild and Scenic Rivers System by legislation passed in October 1976.

The legislation requires that detailed boundaries be established, that the class of river be set, and that a management plan be prepared within one year. The Flathead National Forest is presently developing a time-table for completing these requirements.

Formulation of the scenic easement acquisition program is expected to begin in early Summer 1977. This is the most critical phase from the standpoint of the River System itself and also from the public interest and concern shown to date. The legislation authorized appropriation of $6.7 million for the acquisition of lands and interest in lands. However, none of it can be made available prior to Oct. 1, 1977.

On August 27, 1964, *Ozark National Scenic Riverways* was created "for the purpose of conserving and interpreting unique scenic and other natural values and objects of his-

The Mid-Continent Region, Bureau of Outdoor Recreation, has published the *Blackfoot River (Montana)* Conservation and Recreation Management Plan, a popular version of a working document developed to manage the Blackfoot River Corridor for a 1-year trial period.

The plan rests on two separate legal instruments: conservation of the corridor through use of conservation easements negotiated with individual landowners and management of the river's public use through a recreation lease program. The access points and pedestrian use corridor constitute a recreation corridor separate from but within the proposed conservation corridor. The recreation corridor boundaries, depending on the landowner's prerogative, may or may not correspond to the conservation corridor boundaries. Leases are negotiated between the landowners and a public body, such as Missoula County or the Montana Department of Fish and Game. Easements will be donated to the county, the Department of Fish and Game, or The Nature Conservancy.

The Blackfoot River Conservation and Recreation Management Plan was published to illustrate a concept; the actual plan will continue to evolve with further local input. The recreation management portion is that which was in effect during the summer of 1976 and is being modified to reflect needed changes identified in the first year's trial program.

This process will continue for the next year or two. The Nature Conservancy is presently negotiating with landowners for conservation easements, Phase II of the plan, and it is anticipated that some easements will be donated within the year. The easement phase will be carried out in stages, the first being in the area designated as a conservation reserve, where easements will be negotiated with each individual landowner. The boundaries and other terms of the easements will be determined in the negotiations and will be tailored to meet the landowners' needs and preferences consistent with protection of the river. Each donated easement will be placed in escrow until all easements have been granted or until the expiration of a specified time period; at the end of the time period, if some easements have not been granted, the landowner will be free to choose whether he wants his easement to become permanent or whether he wants it invalidated.

The Blackfoot approach separates management of public recreation use from protection of the river corridor and at the same time insures that these simultaneous efforts are closely coordinated. It is strictly locally motivated and led, with the Bureau providing planning and coordinating assistance and The Nature Conservancy lending its expertise on easements. The plan is being developed and implemented through an open-ended, protracted planning process.

toric interest, including preservation of portions of the Current River and the Jacks Fork River in Missouri as free-flowing streams, preservation of springs and caves, management of wildlife, and provisions for use and enjoyment of the outdoor recreation resources thereof by the people of the United States. . . ."

The area thus created includes some 80,000 acres of land situated in the gently rolling St. Francois hills of southeastern Missouri, and administered by the National Park Service. The rock faces of near vertical bluffs overlook the tranquil hollows below. Some of the Nation's most picturesque caves and springs formed over the centuries by slowly dissolving the dolomite bedrock, are scattered throughout the Riverways. Eleven major, numerous smaller, and many other presumably undiscovered caves dot the river corridors. Many caves contain fantastic stalactites and stalagmites, as well as interesting formations of cave travertine. Other caves enclose pools, springs, streams, and waterfalls; some contain numerous chambers with endless passages and crawlways. Most of the caves contain visible, but often elusive forms of life such as flies, crickets, spiders, salamanders, and bats. Big Spring, the largest of the 12 major springs in the Riverways, releases 277 million gallons of water per day to the Current River. Many of the larger springs flow from clear ultramarine or turquoise pools, often more than 150 feet deep. Collectively, the springs provide most of the normal flow in the rivers.

And it is the rivers—the Current and its main tributary, the Jacks Fork—which give the area its special beauty, charm, tranquility, and recreational opportunities. The 134 miles of unpolluted crystal clear, free-flowing waters offer unusual opportunities for canoeing, floating, swimming, fishing, and john boating. Popularity of the Riverways has continuously increased and annual visitation has now reached 1.5 million.

Region 4, Lake Central, Ann Arbor, Mich. Four streams in the Lake Central Region are part of the National Wild and Scenic Rivers System. These are the St. Croix, Wolf, and Little Miami Rivers and Little Beaver Creek. The Maumee in Ohio and Indiana was found not qualified for the National System. In addition,

six other rivers in the region are being considered for inclusion in the system. These are:

Upper Mississippi River, BOR responsible, preliminary report is undergoing informal review by the Wild and Scenic Rivers Interdepartmental Study Group. Fifty-three miles of the river are in the State system (designated on 6/25/76).

Wisconsin River, joint BOR/Forest Service led study, preliminary report is undergoing informal review by the Wild and Scenic Rivers Interdepartmental Study Group.

Au Sable River, U.S. Forest Service responsible, the study team has almost completed the field reconnaissance of the river.

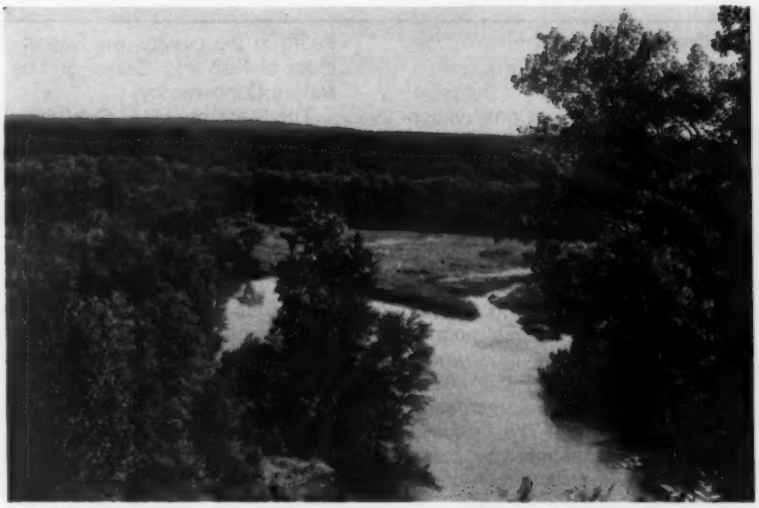
Manistee River, U.S. Forest Service responsible, field reconnaissance has been completed by the study team and qualifying segments tentatively identified.

Kettle River, BOR responsible, initial field work has been completed. Designated a State Wild and Scenic Rivers System component on 7/17/75.

Pere Marquette River, U.S. Forest Service responsible, report has been submitted to the Office of Management and Budget for review.

In 1966 letters poured into the Washington, D.C. office of the Bureau of Outdoor Recreation, and, later, into the offices of U.S. Senators and Representatives as a grass-roots drive took hold to include the wild, unspoiled *Wolf River* in Wisconsin in a national system of wild and scenic rivers. Time for the Wolf River was running out—real estate speculators and developers had at last discovered this priceless resource.

The State was beginning to acquire land and easements along the Wolf River but the negotiations to acquire control over the many parcels along the river were time consuming. Federal action to save the Wolf River appeared to be the only effective answer to the problem.



Michigan's Manistee River is one of six in the Lake Central Region being considered for addition to the National System.

In 1964, a draft "Study Report of the Wolf River, Wisconsin" was prepared by the Department of the Interior. On the basis of this study and strong public support in Wisconsin, the Wolf River was included as one of the "instant" rivers in legislation introduced in the Congress to establish a national system of wild and scenic rivers.

While this legislation was being considered by the Congress, a Land and Water Conservation Fund grant was made to Wisconsin in 1967 to aid the State in acquiring shoreline along the Wolf and its feeder streams in Langlade County. The following year, the passage of the Wild and Scenic Rivers Act brought into the National System that portion of the Wolf River that flows through Menominee County from the Langlade-Menominee County line downstream to Keshena Falls.

Thus far the National Park Service, which is responsible for administering the river as a component of the National Wild and Scenic Rivers System, has been unable to reach an agreement with the Menominee Indian Tribe regarding acquisition of land and interests along the Wolf River. The amount of public use the Menominees will permit on their lands adjacent to the river is uncertain.

Since 1965, there has been strong State and local interest in Ohio for preserving the *Little Miami River* and including it as part of a national system.

The Ohio Department of Natural Resources, encouraged by local groups, asked the Ohio University Planning Institute in March 1966 to study both the Little Miami and the wild and scenic river legislation in the Congress and make appropriate recommendations. This study, completed in 1967, concluded that the Little Miami River possessed the physical character, environment, historic associations, and locational attributes which made its preservation as a free-flowing river and its inclusion in a national system highly desirable.

A good example of local interest in preserving the Little Miami River was the formation of Little Miami, Inc., in September 1967. This nonprofit organization was formed to promote and encourage protective State and Federal legislation and has since grown to an organization of over 2,000 individuals, with the

Ohio's Little Miami River flows through a quiet setting in Clifton Gorge.

Trout fishing is excellent along Wisconsin's Wolf River.

backing and support of about 200 organizations and institutions.

In 1968, the Ohio legislature passed a bill creating a State system of scenic rivers. The Little Miami was the first stream in Ohio to receive official designation as a scenic river. The outgrowth of State and local interest was the inclusion of a portion of the Little Miami in the National Wild and Scenic Rivers System in August 1973. This followed a study by a team composed of concerned State and Federal agencies.

The Little Miami River is one of the few Ohio rivers still in a relatively natural condition. For much of its length, it is a picturesque stream, flowing alternately through a deep gorge, steep wooded slopes, pleasant farmlands, and small towns. Away from the broader floodplain areas, there are some reaches that still can be classified as natural areas. Along the banks, a barrier of trees dominates the immediate visual corridor. Swift water is found in short stretches between the pools and in the bends of the river. Trees have a tendancy to lean out over the channel. Where the river flows through cultivated lands, there is often a fringe of trees separating these lands from the river.

Much of the Little Miami is usable for canoeing. The low degree of difficulty and the leisurely pace of the river, enhanced by a meandering channel marked by occasional riffles, makes a trip on the Little Miami enjoyable for the average canoeist. Camping, hiking, nature study, biking, and picnicking are popular along the river.

The 66 miles of the Little Miami River from Glen Island, just below Foster, Ohio, upstream to the State Highway 72 crossing at Clifton, and the two miles of Caesars Creek from below Caesars Creek Dam to the creek's confluence with the Little Miami are State-administered components of the National System.

There is sentiment in south-central Ohio for the inclusion of more of the stream in the National System. BOR's Lake Central Regional Office is cooperating with local organizations and units of government in determining what is necessary to bring the lower portion of the river up to the standards necessary for its inclusion in the National Wild and Scenic Rivers System.

The *Little Beaver Creek* stream system and surrounding valleys contain some of the most scenic and wild areas in the Midwest. It is a river of steeply incised valleys, abundantly wooded slopes, steep rock outcroppings, boulder-strewn, fast-moving rapids and riffles, quiet pools, and clear, swift-flowing feeder streams.

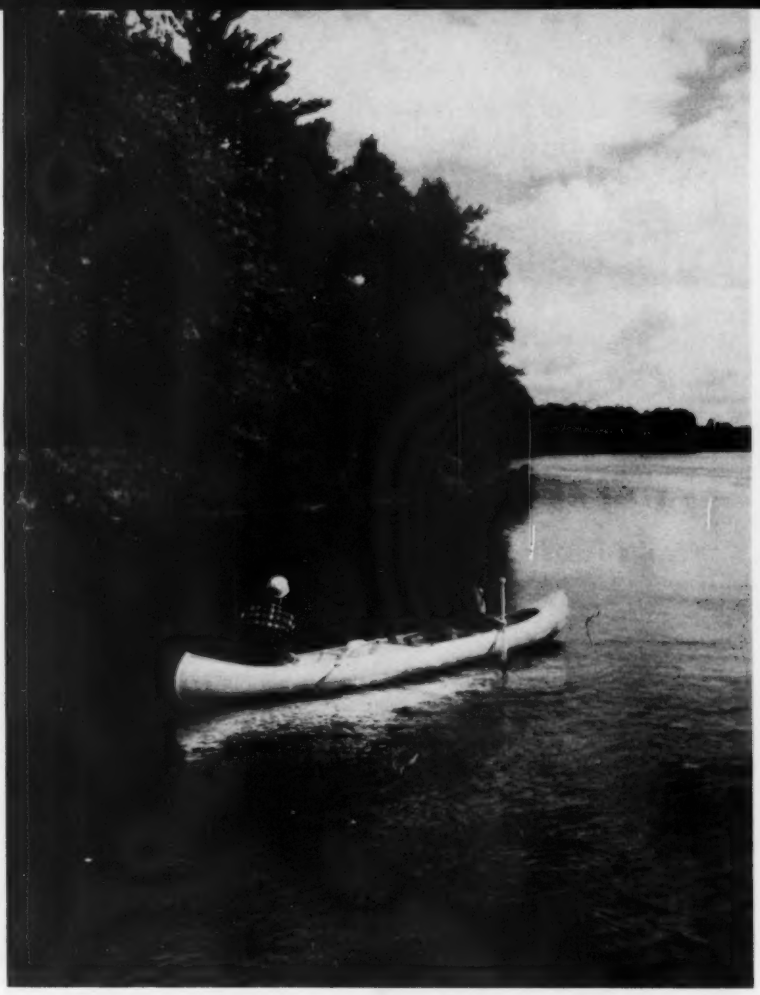
The State of Ohio had shown interest in the protection of its riv-

ers for a number of years subsequent to the passage of the Ohio Scenic River Act in 1968. In July 1970 the Columbiana County Regional Planning Commission requested that Little Beaver Creek be accorded State scenic river designation, although local interest in the protection of this stream system was evident long before this request. In 1965 the regional planning commission prepared a plan for the expansion of Beaver Creek State Park. This plan proposed an area of approximately 9,000 acres, including lands in Pennsylvania. The proposed park included a major portion of Little Beaver Creek.

The recreational and open space potential of Little Beaver Creek had also been recognized in Pennsylvania by the Beaver County Planning Commission and the Western Pennsylvania Conservancy. Both entities expressed their desire to cooperate in the protection of that portion of Little Beaver Creek in Pennsylvania.

Little Beaver Creek was named by the Wild and Scenic Rivers Act as one of the streams that was to be studied for possible inclusion in the National System. A study team composed of representatives from BOR, U.S. Forest Service, National Park Service, Fish and Wildlife Service, Corps of Engineers, the State of Ohio, and the Commonwealth of Pennsylvania was organized in 1971. Following the issuance of the study team's findings and recommendations and a series of public meetings, Little Beaver Creek was designated a State-administered component of the National System by the Secretary of the Interior in October 1975.

Segments of the Little Beaver include the main stem and portions of the North Fork, the Middle Fork, and the West Fork. Little Beaver Creek is the focal point of the 2,514-acre Beaver Creek State Park. This regional outdoor recreation area is being upgraded with additional trails and campgrounds designed to blend with the wilderness character of the river.



Canoeing along the St. Croix National Scenic Riverway in Wisconsin.

In a sense, the *St. Croix River* is three different riverscapes: From its headwaters to Taylors Falls, Minn., the river's character changes from a close, intimate trout stream to a wide, straight, warm-water river. The upper St. Croix and its major tributary, the Namekagon, tend to be shallow, with sand, gravel, and boulder bottoms. The Namekagon and the upper 25 miles of the St. Croix are entirely in Wisconsin, while the lower river forms a portion of the boundary between Wisconsin and Minnesota before it joins the Mississippi near Minneapolis-St. Paul.

For 27 miles below Taylors Falls, the St. Croix is relatively shallow and intimate with dozens of islands, sandbars, and sloughs. The remaining 25 miles of the St. Croix are broader, deeper, and more developed. Bluffs are a distinctive feature along the entire river. The mixture of trees along its length provides a spectacular array of colors in the autumn.

There had long been interest in preserving the wild and scenic qualities of the St. Croix and the Namekagon. Various bills introduced before both the 89th and 90th Congresses proposed a St. Croix National Scenic Riverway (or "Waterway") or the inclusion of the streams in a national system of wild and scenic rivers.

In June 1968, at the suggestion of the Northern States Power Company, the principal owner of lands along the St. Croix, a task force comprised of representatives of the company, the States of Minnesota and Wisconsin, and the National Park Service was formed to set out in general terms a plan to preserve the upper St. Croix and its tribu-

Chattooga River along the Georgia-South Carolina line.

tary, the Namekagon, as free-flowing rivers reasonably accessible for public use.

The Wild and Scenic Rivers Act of 1968 designated as an initial component of the National System the St. Croix between the dam near Taylors Falls, Minn., upstream to the dam near Gordon, Wis., and the Namekagon from that river's confluence with the St. Croix upstream to Lake Namekagon. The St. Croix National Scenic Riverway, thus created, came under the administration of the National Park Service.

The States of Minnesota and Wisconsin and local units of government along the lower St. Croix (below Taylors Falls) had long recognized the recreation potential of that portion of the river. Many of the local governments believed that a coordinated planning effort for the lower St. Croix should be welcomed. Toward this end, an intergovernmental planning organization known as the St. Croix Intergovernmental Planning Conference, with representatives from all of the counties, cities, villages, and townships along the lower St. Croix, was formed in 1970. Sponsorship and guidance for this organization was provided by the Minnesota-Wisconsin Boundary Area Commission.

Study of the potential of the lower St. Croix for inclusion in the National System was required by the Wild and Scenic Rivers Act of 1968. The resulting study concluded that the portion of the St. Croix below Taylors Falls met the criteria of the National System. In October 1972, the lower St. Croix from Taylors Falls to within 25 miles of the river's confluence with the Mississippi was added to the National System; in June 1976 the remaining 25 miles were added to the National Wild and Scenic Rivers System. The first portion of the lower St. Croix is being administered by the National Park Service and the final 25 miles by the two States. The entire St. Croix River, thus, is now protected and preserved under the Wild and Scenic Rivers Act.

Region 5, Southeast, Atlanta, Ga. Three southeastern rivers, the Chattooga, New, and Obed, are now components of the National System; the required study on one, the Suwannee, has been completed; and studies are underway on the Buffalo River, Nolichuckey, Sipsey Fork, and Cahaba.

Study of the Chattooga River, N.C., Ga., and S.C., authorized by the Wild and Scenic Rivers Act, began in 1969 and was completed in June 1971. The Chattooga became part of the National System May 10, 1974.

The *Chattooga River* rises on the Blue Ridge in the rugged mountains of North Carolina between the massive eastern flank of Whitesides Mountain and the resort village of Cashiers. It flows southward through steeply descending, almost completely primitive mountain country for 10 miles in North Carolina, and then continues for 40 miles as the State boundary between Georgia and South Carolina. It drops through the mountainous Blue Ridge province toward the hilly Piedmont, ending in the quiet, still waters of Tugaloo Reservoir.

Altitude ranges from over 4,800 feet along the northern watershed boundary to less than 900 feet at the lower end of the river. In a total distance of 50 miles, the waters of the Chattooga River descend 2,469 feet from an elevation of 3,360 feet near Cashiers, N.C., to 891 feet at Tugaloo Reservoir—an average descent of 49.3 feet per mile. The Chattooga drains an area of 278 square miles.

This is one of the longest and largest free-flowing mountain streams in the Southeast remaining in a relatively primitive undeveloped condi-

Minnesota

The Department of the Interior has approved a $4,003,000 Land and Water Conservation Fund grant to Minnesota for the acquisition and development of outdoor recreation areas along the Upper St. Croix Scenic Riverway.

The project includes acquiring 11,477 acres of land along the river and developing or improving campgrounds, trail center, canoe and boat accesses, picnic areas, primitive campsites, trails, and bridges, burying electric lines, and landscaping. Of the land acquisition, 8,430 acres are being donated by the Northern States Power Company and fee title and easements will be purchased for 3,047 acres. The value of the land donated by Northern States Power will be used by the Minnesota DNR to match the Land and Water Conservation Fund project.

The Upper St. Croix Scenic Riverway is jointly administered by the State of Minnesota and Wisconsin and by the National Park Service. The riverway is expected to become a major-use recreation area for the Upper Midwest.

Contact: Bureau of Planning, Department of Natural Resources, 301 Centennial Building, St. Paul, Minn. 55155.

tion. The river with its immediate environment possesses outstanding scenic, recreational, geological, biological, historical and related values and assets. For most of its length it is hemmed in by forest, without fields, farms, homes or other signs of civilization. It is one of the few mountain rivers in the four-State area of North Carolina, South Carolina, Georgia and Tennessee without substantial commercial, agricultural, or residential development along its shores. Although located near the great population concentrations of the easern United States, a visitor to this river is instantly transported into the midst of an unspoiled primitive whitewater environment. The Chattooga is accessible by auto at only five places and these road points break the river into approximately equal sections.

The segment from 0.8 mile below Cashiers Lake in North Carolina to Tugaloo Reservoir (54 river miles) and the West Fork Chattooga River from its junction with Chattooga upstream 7.3 miles are now part of the National System.

The *New River* in North Carolina became part of the National Wild and Scenic Rivers System in accordance with the provisions of Section 2(e) (ii) of the Wild and Scenic Rivers Act. Under this section, rivers which are permanently preserved and administered, at no expense to the United States, by the State or political subdivision of the State through which the river flows, and which meet the criteria established by the Act, are eligible for inclusion in the system upon application by the Governor of the State to the Secretary of the Interior.

Legislative actions of the North Carolina General Assembly in 1974 and 1975 resulted in the main stem and then the South Fork of the New River being designated as a component of the State Scenic Rivers System. Subsequent applications by the Governor on December 12, 1974, and July 11, 1975, resulted in the determination that the New River met the criteria for components of the National System. Consequently, on April 13, 1976, the Secretary of the Interior officially designated New River as a State-administered component of the National Wild and Scenic Rivers System. Additional protection for the New River was added by Congress through Public Law 94-407, on September 11, 1976. This act limited the scope of a Federal Power Commission license for the Blue Ridge Power Project on the New River in Virginia in such a way that no inundation of the river protected by the Wild and Scenic Rivers Act would be allowed.

The New River in North Carolina consists of the North Fork, South Fork and 4.5 miles of the main stem from the confluence of the North and South Forks to the point where the river crosses the State line into Virginia. These streams are located in the Appalachian Mountains in the northwestern corner of the State.

The South Fork rises in Watauga County near Boone, N.C., and flows northward about 85 miles before it meets the North Fork. The segment in the National System consists only of the lower 22 miles of the South Fork plus 4.5 miles of the main stem.

The river is about 90 miles northeast of Asheville and about 60 miles northwest of Winston-Salem, N.C. Principal highways are U.S. 221 and U.S. 21. The Blue Ridge Parkway can be reached about 10 miles to the east of the river. A short distance north of the State line, in Virginia, is the Mount Rogers National Recreation Area. The South Fork New River has more than one outstandingly remarkable resource value. Geological points of interest include the presence of ancient lava flows and billion-year-old metamorphic rocks and the fact that the New River is part of the oldest river system in North America and the second oldest river in the world.

The archeology of the South Fork area has not been fully explored, but preliminary investigations indicate that a variety of cultures have inhabited the upper New River Valley during the past several thousand years. In addition, the area has valuable fish and wildlife resources, including many State rare and/or endangered species and high recreation and scenic values.

The *Obed River* in Tennessee was authorized for study by Public Law 90-542, October 2, 1968. The study commenced in 1973 but was not completed until June 1976. A total of 46.2 miles of the Obed River was included in the National Sys-

Hiking is a year round activity along Tennessee's Obed River.

tem by Public Law 94-486, October 12, 1976. It is administered by the National Park Service, now preparing management plans for some 7,000 acres of the area.

The Obed from the western edge of the Catoosa Wildlife Management Area to its confluence with the Emory River is a component. Included in the legislation were Clear Creek from the Morgan County line to its confluence with the Obed River, Daddy's Creek from the Morgan County line to the Obed, and the Emory River from the confluence with the Obed to Nemo Bridge.

The Obed River rises near the mountain town of Crossville, Tenn., and flows northeast approximately 45 miles to its junction with the Emory River southwest of Wartburg. Although the initial 10 miles of the river are predominantly bordered by farmland, much of the stream corridor has escaped the impact of civilization.

Rocks fallen from canyon walls pinch the stream into a tumbling succession of small waterfalls fed by several tributaries cascading over massive boulders. Towering eastern hemlock mingle with upland hardwood species and a lush understory of laurel, wild flowers, and ferns. A variety of wildlife and fish ranging from Russian boar, and ruffed grouse to smallmouth bass and muskellunge exist within the corridor.

Clear Creek rises on the Tennessee Valley Divide a few hundred feet upstream from Interstate 40 and flows eastward for 48 miles before entering the Obed at river mile 4.4. Below U.S. Highway 127, Clear Creek enters a remote, scenic, uninhabited area which provides an excellent small-scale wilderness opportunity for fishermen, floaters, hikers, canoeists, naturalists, and other outdoor recreation users.

Daddy's Creek is a narrow stream through gently rolling, pastoral countryside from its headwaters to an abandoned gristmill dam just below the Alvin York Highway crossing. Thereafter, Daddy's Creek winds through a diverse topography characterized initially by high banks and colorful foliage, and gradually changing to a rugged stone canyon.

The entire main stem of the *Suwannee River* from its source in the Okefenokee Swamp in Georgia to its mouth in the Gulf of Mexico on the Florida coast was designated for study by Public Law 90-542 on October 2, 1968. The study report was completed in December 1973 and was transmitted to the Congress on March 15, 1974. The report recommended State action to protect the Suwannee. To this date, neither Georgia nor Florida has taken any action to protect the river.

The Suwannee River watershed is about equally divided between south-central Georgia and north-central Florida. There are 12 counties with frontage on the Suwannee River—four in Georgia and eight in Florida.

The Suwannee River and its tributaries drain an area of over 10,000 square miles. Starting from boggy channels in the Okefenokee National Wildlife Refuge near Waycross in southeastern Georgia, the river begins its 265-mile course to the Gulf of Mexico.

After leaving the swamp, the river meanders through a wide flood plain. The river then flows between rising limestone banks, and the naturally stained water fades as many clear springs feed into it. Passing densely wooded hammocks, more swampland, and finally through extensive salt marshes, it enters the gulf below the town of Suwannee, Fla.

Low, rolling hills and a compact network of southerly oriented streams typify the northern part of the basin. The Withlacoochee and Alapaha Rivers are the primary drainage of the basin north of the Florida-Georgia line. Their headwaters are at an elevation of 460 feet; they cross the State line at an elevation of 70 feet and join the Suwannee about 15 miles south of the State line at an elevation of 25 feet above mean sea level. The Santa Fe River is the third major tributary of the Suwannee.

The southern part of the basin is generally a low, flat plain. The small number of tributaries is largely due to well-drained sands and underground solution channels in the underlying limestone. The innumerable lakes, ponds, and sinks throughout the area collect the rain, where it soaks into the ground, before it can erode a channel or move far enough on the surface to establish a stream.

The numerous springs augment the flow of the Suwannee and in periods of drought are the major source of riverflow. In summer, the spring water is clear and cool in contrast to the stained, warmer water of the river.

The *Buffalo River* in Tennessee was one of the original 27 rivers designated for study by the Wild and Scenic Rivers Act, October 2, 1968. An inter-agency study team was formed in November 1970. The completion of other studies delayed the initiation of the Buffalo study until December 20, 1973. A series of public meetings was held throughout the first half of 1974 and a draft field report was issued in September of that year. The latest review draft of the Buffalo study was issued in June 1976.

The Buffalo River is one of the few free-flowing streams of its length remaining in Tennessee. It remains today as one of the most outstanding examples in Tennessee of a pastoral stream. For much of its 117-mile length the river meanders alternately between forests, farms, and small communities with a notable absence of many man-made structures such as cottage developments, road crossings, or other disturbances within the river corridor.

The Buffalo varies in depth from a few inches over rocky shoals to more than 12 feet in pools. Shoal areas are spaced uniformly along the river and may vary from 50 to 300 feet in length. Pools vary in length from about 100 feet to as much as 3,000 feet.

The scenery along the river as seen from the water is a changing panorama of forested rolling hills, steep bluffs, pasture, and cropland. Agricultural land is frequently partially or fully screened from the river by a fringe of bottomland hardwoods containing such species as sweetgum, sycamore, willow, yellow poplar, pin oak, and cottonwood. A variety of flowering shrubs, wild flowers, and wildlife enhance the river experience. In addition, the water is notably clear and unpolluted except during periods of heavy runoff.

The *Nolichuckey River* in North Carolina and Tennessee was one of 29 rivers added to the Section 5(a) study list of the Wild and Scenic Rivers Act by Public Law 93-621, January 3, 1975. A study team was organized late in the summer of that year and the study was officially begun in December. The draft field study report which will present the findings and conclusions of the study team is currently being prepared.

The Nolichuckey River begins at the confluence of the North Toe and Cane Rivers approximately 7 miles northeast of Burnsville, N.C., and flows in a generally westerly direction through numerous loops and bends until it is absorbed in the backwaters of Douglas Reservoir near Morristown, Tenn. The study segment consists of the entire main stem of the river (110 river miles) from its origin as a mountain stream in the Blue Ridge province of the Appalachian chain through the great agricultural valley of eastern Tennessee to its mouth in Douglas Reservoir.

The topography of the Nolichuckey region can be characterized as mountainous with sharp crests and steep slopes from its headwaters to the town of Erwin, Tenn. In this segment the river flows through an impressive 8-mile gorge which is contained within the Pisgah National Forest on the North Carolina side and the Cherokee National Forest on the Tennessee side. At Erwin, the Nolichuckey enters a valley between Buffalo and Unaka Mountains which are the westernmost ridges of the Blue Ridge range in this area. Below Erwin, the river passes between Buffalo Mountain and Rich Mountain where it leaves the Blue Ridge province and enters that section of the Valley and Ridge province known as the Great Valley. The Great Valley is a lowland belt characterized by numerous parallel low ridges and valleys that lie in a generally northeast-southeast direction. The relief is predominantly rolling to

The Buffalo River in Tennessee.

hilly though it ranges from nearly level to steep.

Streamside land use consists principally of cultivated croplands and pasture with the exception of the National Forest lands in the gorge area. Through extensive reaches of the river these agricultural lands run nearly to the water's edge or are barely screened by a narrow fringe of bottomland hardwoods.

The Nolichuckey River corridor contains many reminders of civilization throughout its 110-mile length. Among these are 21 road crossings and 2 under construction, 2 railroad bridges, 16 miles of parallel railroad, 16 miles of parallel roadway, 5 powerline crossings and 9 planned projects (3 by TVA and 6 by the French Broad Electric Membership Corp.), and 1 pipeline crossing. The realignment of State Route 36 at Erwin has resulted in extensive channel relocation and modification of the surrounding landscape. In addition, the original free-flowing character of the Nolichuckey River has been altered by two major impoundments. The impoundments are the Douglas Reservoir which has backwater effects up to river mile 9 and Greeneville Dam which affects about 6 miles of the river in the middle of its course.

The *Cahaba River* in Alabama was also authorized for study by Public Law 93-621, in January of 1975. The study commenced in October of 1976 under the leadership of the U.S. Forest Service. Public meetings were held in January 1977 to present preliminary results of the field investigations to interested citizens and groups.

The Cahaba River Basin covers approximately 1,870 square miles in portions of eight counties—Bibb, Chilton, Dallas, Jefferson, Perry, St. Clair, Shelby, and Tuscaloosa. Largely located in central Alabama, it is one of two rivers in Alabama flowing entirely intrastate. Headwaters of the Cahaba are in the northeastern corner of Jefferson County and the western edge of St. Clair County.

It flows southwesterly through southern Jefferson County and forms much of the boundary between Jefferson and Shelby Counties. Continuing downstream, it flows through the northwest corner of Shelby and continues through Bibb, Perry, and Dallas Counties. The Cahaba River ends near the center of Dallas County with its confluence with the Alabama River and William "Bill" Dannelly Lake.

The actual study segment is approximately 116 river miles in length and runs from the U.S. Highway 31 bridge near Birmingham to the U.S. Highway 80 bridge west of Selma.

Soils of the land area related to the Cahaba are quite varied. Consequently, there is widely varying vegetation. Pine and hardwood trees, mountain laurel, wild azaleas, dogwood, and many other shrubs and flowers are found along the watercourse. The Boothton Ford area has some unique plants that are of particular interest to scientists.

Bass, bream, and catfish are just a few of the many species of fish in the Cahaba River. Of the 148 species in Alabama's freshwaters, only 25 have not been found in the Cahaba River. Its fish ecology is unique in that several species are found only in the Cahaba River, or in only a few other streams.

Much of the land along the Cahaba is owned by large corporations, principally steel and paper companies. The paper companies have clearcut several streamside areas for the pulpwood and the steel companies have strip mined extensive areas for the coal. Though the impact of these activities on the visual corridor of the Cahaba has not been severe up to the present, their continuation into the foreseeable future could result in increased runoff and adverse effects on water quality and aquatic life.

The *Sipsey Fork of the Warrior River in Alabama* was authorized for study by Public Law 93-621 in January 1975. The study led by the U. S. Forest Service is underway.

Region 6, Northeast, Philadelphia, Pa. Eleven rivers have received study or are currently being evaluated for Federal Status. These include:

The Allagash in Maine, currently a State-administered component in the National Wild and Scenic River System. (See Maine under State Programs.)

The *Connecticut River,* studied by the Bureau of Outdoor Recreation under special authorization by Congress in 1966. A Gateway Committee formed by State and local officials in April 1971 rejected all recommendations for establishing a National Recreation Area along the river. A 1973 Act of the Connecticut Legislature authorized protection of some 25,000 acres along the river and authorized expenditures up to $5 million for the purchase of scenic easements and development rights on 2,500 acres within the defined zone. A Connecticut River Gateway Commission, locally created and controlled, now exerts a unifying influence on land and water use patterns that affect the Connecticut River.

The Bureau of Outdoor Recreation in 1975 recommended that the *New River Gorge* in West Virginia be designated as a component of the National Wild and Scenic Rivers System. This followed a study of the West Virginia stretch of the New River requested by U.S. Senator Robert Byrd. Geological records show that the New River was the main headwaters branch of an ancient watercourse called the Teays River.

The Teays flowed westward to an immense inland sea that covered the central part of North America during the Mesozoic Era. The size and topographic relief of the New River Gorge make it outstanding. The Gorge averages 1,000 feet deep

The New River Gorge, W. Va.

with a river course which is narrow and treacherous in some sections. Because the New River predates the Appalachian Mountains, it is the only river which flows completely across the chain from east to west.

Two rivers, the *Allegheny* and *Clarion* in Pennsylvania were studied by the Bureau of Outdoor Recreation and found unqualified for inclusion in the National Wild and Scenic Rivers System.

The Northeast Region of BOR has completed studies of the *Delaware River* in New York and Pennsylvania and the *Penobscot River* in Maine, and found that they qualified for inclusion in the National Wild and Scenic Rivers System. Both studies are under review by the Office of Management and Budget.

Finally, studies are underway on *Pine Creek* in Pennsylvania, the *Youghiogheny* in Pennsylvania and Maryland, and the *Housatonic* and *Shepaug Rivers* in Connecticut. Studies on Pine Creek, the Youghiogheny, and Housatonic are scheduled for completion in 1977; the Shepaug in 1978,

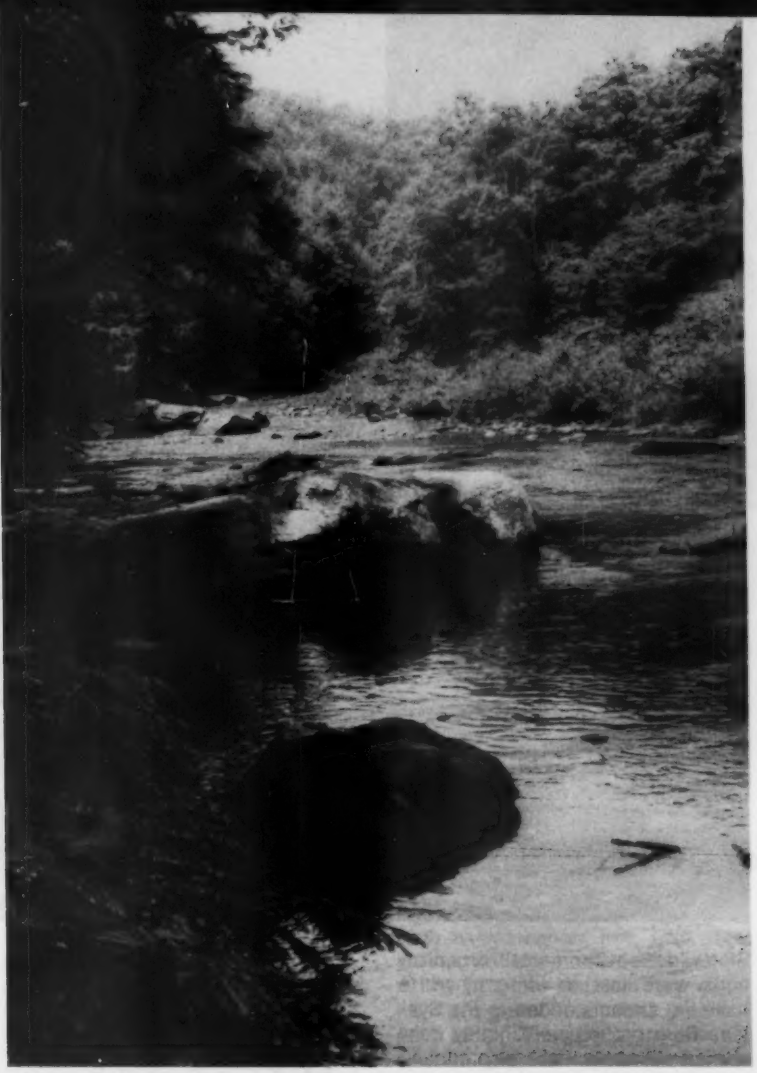
Region 7, South Central, Albuquerque, N. Mex. The *Rio Grande* in northern New Mexico was among the first eight rivers to be added to the National Wild and Scenic Rivers System. Officially designated on October 2, 1968, the 50-mile segment extends from the Colorado-New Mexico State line downstream to the Taos Junction Bridge and Highway 96, where the first opportunity for streamside automobile travel begins. Included in the designation is the lower four miles of the Red River, a major tributary of the Rio Grande.

Two Federal agencies are involved in management of the Rio Grande Wild and Scenic River segment. The Bureau of Land Management is responsible for administration of approximately 84 percent of the river corridor; where the stream flows through National Forest lands, the responsibility is that of the U.S. Forest Service.

Among the significant attributes of the Rio Grande in northern New Mexico, perhaps the most striking is the Gorge—a 50-mile-long basalt rimmed trench from 300-800 feet deep. Generally inaccessible except by trail, the river is a prime trout fishery and challenging raft and kayak course. Indian petroglyphs, interesting plants and wildlife, and hot springs are to be found, and offer additional appeal to the recreationist.

Maine's Penobscot River.

Public Law 92-237, approved March 1, 1972, established the *Buffalo National River* in the State of Arkansas. Approximately 132 miles of river are protected under the legislation which is similar in concept but separate and distinct from that which established the National Wild and Scenic Rivers System. All but the upper 16 miles, located within the Ozark National Forest, are included in the legislation.



Special Federal legislation in 1972 designated Buffalo National River to protect 132 miles of that Arkansas stream.

The Shepaug River in Connecticut.

Fifty miles of the Rio Grande River in New Mexico is included in the National System.

Approximately 60 percent of the proposed 96,000 acre river area has been acquired by the National Park Service, the Federal agency in charge of managing and protecting the Buffalo. The management philosophy is to preserve unique and scientific features, to maintain the stream's free-flowing nature, to provide hunting and fishing possibilities and to determine the area's fitness for an eventual wilderness designation.

Typical of Ozark streams, the Buffalo is characteristically clear and unpolluted and offers significant canoeing, camping, photography, and nature study opportunities. Many commercial and undeveloped caves along or near the river offer additional occasions for exploration.

In March 1973, a reconnaissance group of Federal and State agencies, led by the Bureau of Outdoor Recreation, began a study to determine if a section of the lower *Rio*

Grande in Texas merited addition to the National Wild and Scenic Rivers System. As specified in the Wild and Scenic Rivers Act, the portion under study was to extend from the west boundary of Hudspeth County, Tex., to the east boundary of Terrell County, Tex. Because the river forms part of an international boundary between the United States and Mexico, the Mexican government agreed to cooperate in the study, but requested that the study segment be limited to the section between the Chihuahua-Coahuila State line on the west and the headwaters of Amistad Reservoir on the east. After subsequent discussions with the Mexican government, it was agreed that the study would be geared to evaluate and make recommendations only for the U.S. side of the river.

The study has been completed and the final environmental impact statement has been made public. The document notes that 191 miles of the Rio Grande, from the Chihuahua-Coahuila State line downstream to the Terrell-Val Verde, Tex., county line, qualifies for addition to the National Wild and Scenic Rivers System. Administration and management would be the responsibility of the National Park Service.

The study report is currently under consideration by the Office of Management and Budget, and after clearance will be transmitted to the President and to Congress for final action.

October 1975 saw the beginning of a most interesting and complex wild and scenic river study. The *Illinois River* of northeastern Oklahoma, along with two of its major tributaries, Flint and Barren Fork Creeks, had been slated for study by a January 1975 amendment which added additional study rivers to the National Wild and Scenic Rivers Act. A very well organized group of landowners, controlling over 90 percent of the stream beds and adjacent lands, actively opposed the study and potential designation of the streams. Area and Statewide environmental organizations were just as determined to have the streams added to the System. Both groups were highly concerned over potential and proposed projects which would affect the streams: dams, upstream sewage plants and electric generating stations, downstream nuclear parks, large scale second home developments and an across-State transfer of Illinois River water for irrigation purposes.

A Bureau of Outdoor Recreation study of Oklahoma's Illinois River is due for completion in 1977.

The Bureau of Outdoor Recreation, as lead agency in the study, responded by structuring its plan of study to allow maximum public involvement. A citizen's advisory panel was formed to assist the study team. Bureau personnel taped television shows and wrote newspaper articles to clear up misconceptions regarding the Wild and Scenic Rivers Act and System. Additional public meetings were held to announce and explain that a total of 114 miles of stream had been found to qualify for addition to the System.

The most significant public involvement thus far has been a workshop held on November 5 and 6, 1976, at a State Park near the river. The workshop brought together 225 people representing widely diversified interests and allowed them to work in small, multi-disciplinary groups to produce ideas or plans regarding what they considered to be the best way to manage the streams and deal with all the threats and problems associated with the river.

Armed with the feedback gained during all public encounters, the Bureau is now in the process of developing various alternative management plans for the streams. From these alternatives, an eventual study recommendation will be selected. The study is on schedule, and should be completed by late 1977.

Water: The Next National Crisis?

A fold boater plies Washington State's Skagit River.

Is America facing a major water crisis? Many people believe so. The Department of the Interior's recently published study entitled "Critical Water Problems Facing the Eleven Western States" documents the nature of these emerging problems. The first National Conference on Water, held in April 1975, provided a forum where major water problems were discussed and consensus was obtained regarding the major issues. A second National Conference on Water is scheduled for this spring. It will update these views on critical problems. The 1975 National Assessment of Water and Related Lands documents the problems from both the state-regional perspective and the national perspective.

Man's use of water falls into two modes. (1) *instream uses* such as hydropower generation, navigation, water conveyance, waste assimilation, recreation, esthetics, estuarine inflow, and aquatic and riparian ecosystem maintenance (which includes support of the varied life forms), and (2) *offstream uses* such as irrigated agriculture, municipal water requirements, and industrial water requirements (including cooling water for energy plants). The allocation of the available water supply among these uses has always been a volatile issue in the West, and in certain areas of the East is emerging as an issue of major importance.

Recently, there has been increasing recognition of the necessity for maintaining water in the streams for uses such as recreation, fish and wildlife production, and esthetic enjoyment. The need is particularly critical in the face of increasing water demands for energy and expanded agricultural production. Recent legislation and court decisions also have pointed up the need for identifying instream flow requirements.

Making wise decisions regarding the allocation of water presumes the availability of sound data on relative needs of all types of water users. The environmental uses of water have only recently been given a voice in the decision-making arena. Consequently, data supporting the needs of instream uses, such as recreation, fish, and wildlife has not been well developed.

It is true that instream flow studies have been conducted over the past 20 or 30 years in relation to specific projects. However, these were usually under-funded and occurred after the major decision had been made. Oregon was the first State which launched a systematic series of studies to establish instream flow requirements for anadromous fish and other fish species. In recent years, too few additional States have passed legislation that resulted in implementation of a similar program. However, for most of the Nation, there simply is not a data base that provides for preplanning information of this type.

In 1972, conferences were held in Portland, Oreg., and Olympia, Wash., which focused attention on the need for development of improved methodologies for determination of instream flow requirements for fish and wildlife and outdoor recreation. These meetings were followed by several major efforts in the Pacific Northwest and were highlighted last spring by an Instream Flow Symposium held in Boise, Idaho. Almost concurrently a state-of-the-art document developed under contract with the Fish and Wildlife Service was reviewed by specialists in this field at a meeting in Logan, Utah, in September 1975.

One theme consistently heard at all these gatherings was the need to establish an entity to provide full-time coordination and service to the increasing list of practitioners in this new specialty area. This need has led to the specific activities discussed below.

The Bureau of Outdoor Recreation has a contract to develop and test methods for determining instream flow needed for various recreation pursuits. The objectives of the study are to (1) develop criteria for quantifying water requirements for instream recreation use, (2) develop methodologies and guidelines for evaluating impacts and determining monetary and nonmonetary benefits for increments of flow relating to recreation, and (3) determine the legal and institutional constraints on the use of instream water for recreation. The contract will be completed in 1977. A study Advisory Committee composed of governmental and private agency representation is serving in a consulting capacity.

In July 1976, under the leadership of the Fish and Wildlife Service, a new entity named the Cooperative Instream Flow Service

Group (IFG) was established in Fort Collins, Colo. The group was conceived as a multi-agency, interdisciplinary entity which should become the center of activity, providing a focal point for instream flow assessments. The Bureau of Outdoor Recreation is participating in this endeavor.

The goal of IFG is to provide services to entities concerned with (1) the identification of instream flow requirements through accelerated application of improved methodologies, and (2) the implementation of recommendations for instream flows for fish, wildlife, aquatic organisms, recreation, and esthetics in all major U. S. streams.

These services will be available to Bureau of Outdoor Recreation, and Fish and Wildlife Service personnel, other Federal and State agencies, and to the private sector. The IFG is committed to provide maximum information to those who make recommendations and decisions affecting stream ecosystems, associated riparian communities, and instream values.

The IFG is composed of persons with a variety of backgrounds and will address three particular areas of instream flow needs: the physical, biological, and decision-making components. Close coordination of these components is essential. The physical component is necessary for a basic understanding of the changes in stream channels associated with altered flows which directly affect outdoor recreation. A predictive understanding of changes in channel configuration and hydraulic parameters is necessary for their theoretical extension to the biological components of the aquatic ecosystem. The biological component is essential to development of adequate methodologies for determining requirements of fish and wildlife, recreation, and other instream uses. However, proven methodologies may yield little in the way of useful results unless they are undertaken with an awareness of needs and constraints in the decision arena. Constant feedback between the three components is needed to keep biological and recreational investigations focused on relevant recommendations, and to keep the assessment of legal guidelines focused upon ecologically sound principles.

The Instream Flow Group will therefore function in the following role:

Advising—Provide advice and recommendations to Fish and Wildlife Service Ecological Services field offices, Bureau of Outdoor Recreation Regional Offices, State, and other Federal agencies regarding appropriate methods; data analysis and review of reports, environmental impact statements, and other relevant documents; assistance in design and analysis of instream flow programs.

Synthesizing—Pull together the results of relevant basic research to continually improve methodologies. Based on sound theory, conceptualize design and test needed methodologies.

Training—Conduct workshops and short courses to provide the field practitioners a better understanding of the legal and institutional constraints associated with implementing instream flow recommendations and applying methodologies.

Initiating—Maintain close contact with the research community and continually encourage researchers to direct their efforts toward better understanding of relationships between stream flow and biomass of target species. Granting agencies will be encouraged to support these research activities through IFG by scoping out research programs and serving on research review panels.

The group is striving to increase the capability of environmental interests to participate effectively at the alternative selection and other stages of water resource planning and management. Water availability assessments have typically been the initial step in water resource development planning. The effort is aimed at methodology development to incorporate environmental maintenance requirements into such assessments; that is, a given surface and ground water supply less that amount which is already diverted for out-of-channel consumptive uses, less the amount required to maintain the existing instream and riparian eco-system equals the amount of water available for development without significant impact. In the past a typical water availability assessment simply identified the water in a stream channel as being totally available for development, with planning proceeding to site development before environmental and other instream water uses became involved. Consequently, this approach places the agencies charged with environmental protection in a reactive position, attempting to change or even stop most water development projects.

By a new approach identifying environmental resource maintenance requirements during the water availability assessment stage, the environmental conservation sector would be alerted early in the planning process; this would allow enough lead time to provide firm data from which several alternatives and options could be provided to decision makers. Options among which the decision can be sought should then include *alternative uses, alternative technology developments,* and *alternative site selections.* Only if these types of alternatives are available to the decision maker can rational and equitable decisions be made.

Clearly, what is needed is a national program of sufficient scope and funding to address the issue in a comprehensive, coordinated (State and Federal joint venture) manner with bold, creative leadership. This is the goal of the Instream Flow Service Group.

Contact: Keith D. Bayha, Fish and Wildlife Service
William H. Honore, Bureau of Outdoor Recreation

Symposium on River Recreation Management and Research

How to safeguard America's finest rivers while playing host to growing numbers of river recreationists drew 450 top river experts and students to Minneapolis in January 1977.

Discussions centered around the future of approximately 10,000 miles of rivers designated as wild, scenic, and recreational or as candidates for inclusion in the National Wild and Scenic Rivers System.

Management techniques, research methods and needs, and strategies for recreational use and resource preservation discussed at the meeting also will assist in evaluation, designation, preservation, and management of several thousand additional miles of State and local river systems.

What several hundred river managers, researchers, academicians, river guides, outfitters, Federal, State, and local administrators, and natural resource students discussed at the meeting illuminates one of America's rapidly expanding recreation pursuits.

Use rises steadly on streams throughout the U. S., compounding management problems.

How do you manage increasing demand on a decreasing resource?

Every year, there are fewer stream miles suitable for river recreation. In addition to impoundment, continuing channelization, dredging, landfills, and construction of roads, trails, bridges, pipelines, wells, power stations, and transmission structures all affect the quantity and quality of the resource. Water for agriculture, mineral exploration and development, desalinity projects, and geothermal research and de-

velopment reduce esthetic qualities and water flow.

At the same time, river recreation popularity is expanding rapidly. More people floated down the Colorado River through the Grand Canyon in 1972 than during the entire century from 1869 to 1969. Some areas can accommodate only one-third or fewer of the 1977 permit applicants.

Diversity in rivers to be protected and recreational uses of them may be an answer. Roderick Nash of the University of California at Santa Barbara opined that America may have to go as far as providing "amusement park" rivers in addition to wilderness rivers and those preserved for scenic, historical, and archaelogical values. On these amusement park rivers, boats might tour bow-to-stern in a continuous line carrying masses of humanity. Conceivable, even, are situations where ski-tow arrangements would bring river recreationists and their crafts back upstream for repeated "runs" down white water.

These are extremes, of course; hopefully, programs now underway will retain a reasonable number of rivers in free-flowing natural, wild, or scenic condition.

Limitation of numbers of permits is a method of river protection now in use. There are others. Sam E. Warren, manager of the Salmon River in Idaho, says there are several ways to ration river recreation. Access could be made more difficult; trips made more expensive; managers could require all river users to employ guides; they could eliminate all guide and outfitter service so that the unskilled and unequipped could not easily participate; administrators could require skills licenses, or limit permit eligibility so that an individual could obtain only one per year or per lifetime.

How can wild, scenic, and recreational river managers resolve conflicts of public rights to stream use with riparian rights, or those of property owners along the shoreline?

Water and stream rights and accessibility are a mish-mash across the country. In much of the Nation, the public has a right to use navigable streams; however, navigability is defined differently in different States. In many western States, water users of long standing have a right to appropriate established portions of streamflow. In at least one case, in Colorado, water law is being contested to the point of preserving enough streamflow to sustain fish populations. In many areas, Federal, State, and local acquisitions can assert a public right to usable water flow, access, and riparian land uses. Zoning and other regulations are always possible within limits permitted by the States.

How can conflicting uses such as water skiing, fishing, boat racing, floating, and swimming be accommodated on public streams?

More people and added uses require increased regulation by more government agencies. Time-of-day zoning, space-zoning, alternate periods of use, and outright ban of certain uses on the more pristine streams were suggestions of how to meet the problem.

How can water pollution be controlled, human waste disposed, vegetation and soils protected, and user safety assured?

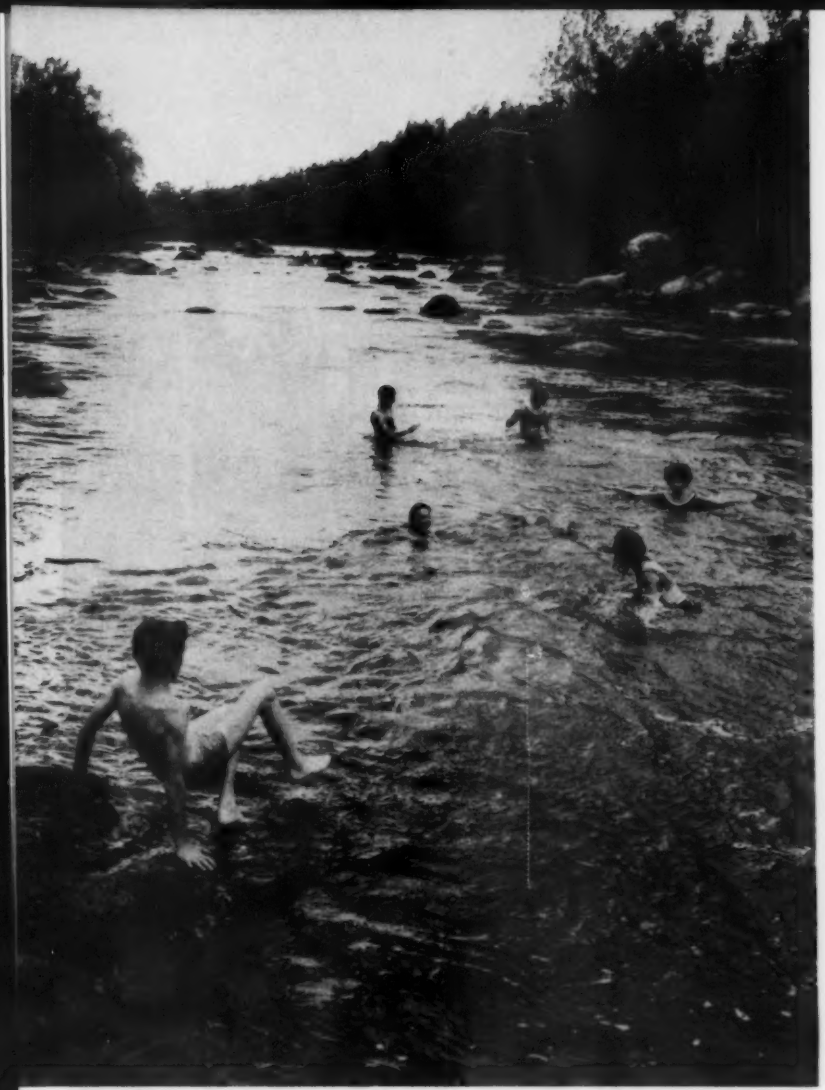
An answer which permeated the sessions, and applied to this and several other questions was: Manage with a principal goal to protect the stream and related land resources.

Certainly, a managing agency should be established; it should develop a plan for operating the area in a manner carefully designed to minimize pollution, ease compaction and removal of vegetation, and protect users.

In the face of rapid expansion of commercial river trips, guides, and outfitters, how can managers protect individual or do-it-yourself river recreation while preserving free enterprise?

Heated discussion on this question erupted several times. There appears to be no easy or universally accepted answer. Outfitters believe they do a good job of protecting the resources, making river experiences possible for many recreationists who otherwise could not or would not float a river, and contributing to public safety while providing public outdoor education.

Opponents in many instances adamantly objected to allocation of substantial shares of the allowable carrying capacity to commercial trippers. There is a feeling that at some point, traffic volumes tend to destroy or eliminate the wild or scenic recreation experience. Research has shown in some in-



A refreshing dip along the Wolf River in Wisconsin would not be compatible with many other river uses.

stances, however, that visitor numbers and contacts play little or no role in the satisfaction expressed by river users surveyed in Grand Canyon and along Wisconsin's Brule River.

What are some of the approaches to managing streams with multiple ownership?

There is a need to seek the cooperation and coordination of owners and/or managing agencies or bodies involved. Prepare a management plan. Involve the public and all owners at every step of planning and management. Use zoning in some instances. Where possible, acquire scenic easement, fee title, or other control of major access points and usable segments of shoreline.

In most instances, these multiownership areas are susceptible to incompatible land uses, user conflicts, multiple jurisdictions, and over-lapping Federal, State, and local authorities.

How can planners and researchers evaluate river quality for potential designation?

Land forms, vegetative patterns, water quality, and human uses and impacts are major factors. Unique qualities, such as geological features, historic background, and archaelogical interests should be considered. Future, long-term potentials should be taken into account. "There is no need to preserve a river only to find in a few years it is dry."

In addition to these general areas of interest, there were statements on how to:

Evaluate recreation use impacts on soils and vegetation;
Measure economic benefits of alternative uses of rivers;
Evaluate density, crowding, and satisfaction as a means of determining carrying capacity;
Count river recreation users;
Assess river potentials for recreation use;
Study river users for motives, preferences, values, and behavior patterns;
Interpret the river and related resources; and
Develop a research capacity in field organizations so as to meet immediate management needs.

Managers with experience or research background in river management gave specific information on:

Michigan's Rivers System; Maine's Allagash River program; river management in the Huron-Clinton Detroit Metropolitan Area; the Tennessee Valley Authority program for the rivers; a survey of trends in use and management of rivers in the eastern U.S.; the Salmon River in Idaho; the Grand Canyon; the Ozark National Scenic Riverways; and status of the National Wild and Scenic Rivers System.

Although there certainly were more questions than answers, sponsors of the symposium did not seem to mind. These identify needs for river recreation research, one of the symposium goals.

Looking to the future, the sessions heard suggestions that mounting recreation demands may require regional approaches to river research and management. One organization formed to consider common problems on western rivers is the Interagency White-water Man-

agement Committee. The committee membership includes representatives of the National Park Service, Bureau of Land Management, Bureau of Outdoor Recreation, U.S. Forest Service, U.S. Coast Guard, and U.S. Army Corps of Engineers.

Nationally, there are needs to identify and define user demands, describe the available resource systems, and determine which management tools are effective in which situations and for achieving which objectives.

Some areas for investigation include:

How river recreation use and characteristics of users vary on individual rivers, between rivers, and with time;

How current and potential users define quality river recreation experiences; and

How patterns of river recreation use can be modified.

Certainly, the point was established by the end of the symposium that there must be continuing, step-by-step public involvement in research and management planning.

Finally, forecasts included views that there will be decreases in the rate of growth in demand for outfitter services; increases in demand for do-it-yourself river outings; and increases in competition and conflicts between commercial guide-outfitters and do-it-yourself river users.

The River Recreation Management and Research Symposium was sponsored by the Backcountry River Recreation Management·Research Project, North Central Forest Experiment Station of the U.S. Forest Service, and cosponsored by the University of Minnesota's College of Forestry; Northeastern Area, State and Private Forestry of the U.S. Forest Service; Interagency White-water Committee; Minnesota Department of Natural Resources; Tennessee Valley Authority; U.S. Army Corps of Engineers; and the Bureau of Outdoor Recreation, National Park Service, Bureau of Land Management, and Office of Water Research and Technology of the U.S. Department of the Interior.

David W. Lime of the North Central Forest Experiment Station, St. Paul, Minn., received commendation for his work in organizing the national conference. Lime stated at the end of the meeting that symposium proceedings would be published soon by the Experiment Station. He also said that a bibliography on river recreation research and management would be completed within a few weeks. Both will be available upon request.

Contact: David W. Lime, Principal Geographer, North Central Forest Experiment Station, U.S. Forest Service, Folwell Avenue, St. Paul, Minn. 55108.

Michigan's Jordan River, a component of the State Natural Rivers System, offers tricky canoeing.

White House Conference for Handicapped Individuals

Several hundred handicapped Americans and leaders of programs for the handicapped will meet in Washington, D.C., May 23-27, 1977. Recreation and leisure for handicapped persons have been identified among the top subjects for discussion. Leading up to the national conference, States across the U.S. held State conferences on the needs of the handicapped last year. Governors also have appointed White House Conference Directors, most of them handicapped individuals.

Contact: White House Conference for Handicapped Individuals, 1832 M Street, N.W., Washington, D.C. 20036.

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